PRECISION STRIKE ASSOCIATION

Precision Strike
2008

Winter Roundtable

"Precision Engagement – Strategic Context for the Long War"

Arlington, VA

January 23, 2008

PSA Winter Roundtable 2008 Agenda

JOINT CAPABILITY AREAS OVERVIEW:
Joseph C. Bonnet, III—Deputy Director for Joint Force Development & Integration, Operational Plans & Joint Force Development Directorate (J-7), The Joint Staff

APPLICATION OF ISR CAPABILITIES TO TIGHTEN THE KILL CHAIN:
Colonel Dash Jamieson, USAF — AS/A2 Director, ISR Transformation
LRD LASE DES Video mpeg Movie file *Window Media*

THE JOINT CAPABILITIES INTEGRATION & DEVELOPMENT SYSTEM (JCIDS)—DEMONSTRATING RELEVANCE TO DECISION-MAKERS:
Lieutenant Colonel Prince Valin, USAF—Chief, Kinetic Weapons Branch, Force Application Engagement Division (J-8), The Joint Staff

MISSILES & WEAPONS MARKET IN PERSPECTIVE:

Jeff Ryder—Director, Strategic Markets, BAE Systems

Precision Strike Association
Winter Roundtable Agenda
January 23, 2008

U.S. HOUSE OF REPRESENTATIVES PERSPECTIVE ON DEFENSE WEAPONS SYSTEMS:
Representative Joe Sestak (D-PA, 7th District)—Member, House Armed Services Committee
(no presentation)

GMLRS OVERVIEW & LESSONS LEARNED FROM IRAQ AND AFGHANISTAN:
Colonel Gary Kinne, U.S. Army—TRADOC Capabilities Manager, Precision Fires, Rocket & Missile Systems
(presentation not approved for distribution)

CONGRESSIONAL OUTLOOK—DEFENSE CHALLENGES:
Richard B. Ladd—Chairman, Robison International, Inc.
(presentation not approved for distribution)

KEYNOTE ADDRESS: TOMORROW'S PRECISION ENGAGEMENT BATTLEFIELD CHALLENGES—DOD'S NATIONAL DEFENSE STRATEGY:
Honorable Ryan Henry—Principal Deputy Under Secretary of Defense for Policy
(presentation not approved for distribution)

JOINT CAPABILITY AREAS OVERVIEW:
Joseph C. Bonnet, III—Deputy Director for Joint Force Development & Integration, Operational Plans & Joint Force Development Directorate (J-7), The Joint Staff

CONGRESSIONAL STAFFERS' PANEL—PRIORITIES AND ISSUES:
Greg Kiley
(presentation not approved for distribution)

A POLITICALLY INCORRECT GUIDE TO DEFENSE POLICY IN WASHINGTON
Peter Huessy—President, GeoStrategic Analysis
(presentation not approved for distribution)

APPLICATION OF ISR CAPABILITIES TO TIGHTEN THE KILL CHAIN:
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THE JOINT CAPABILITIES INTEGRATION & DEVELOPMENT SYSTEM (JCIDS)—DEMONSTRATING RELEVANCE TO DECISION-MAKERS:
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EMERGING TECHNOLOGIES FOR PRECISION WEAPONRY
Stephen Welby—Director, Tactical Technology Office, Defense Advanced Research Projects Agency
(presentation not approved for distribution)

MISSILES & WEAPONS MARKET IN PERSPECTIVE:
Jeff Ryder—Director, Strategic Markets, BAE Systems

Joint Capability Areas

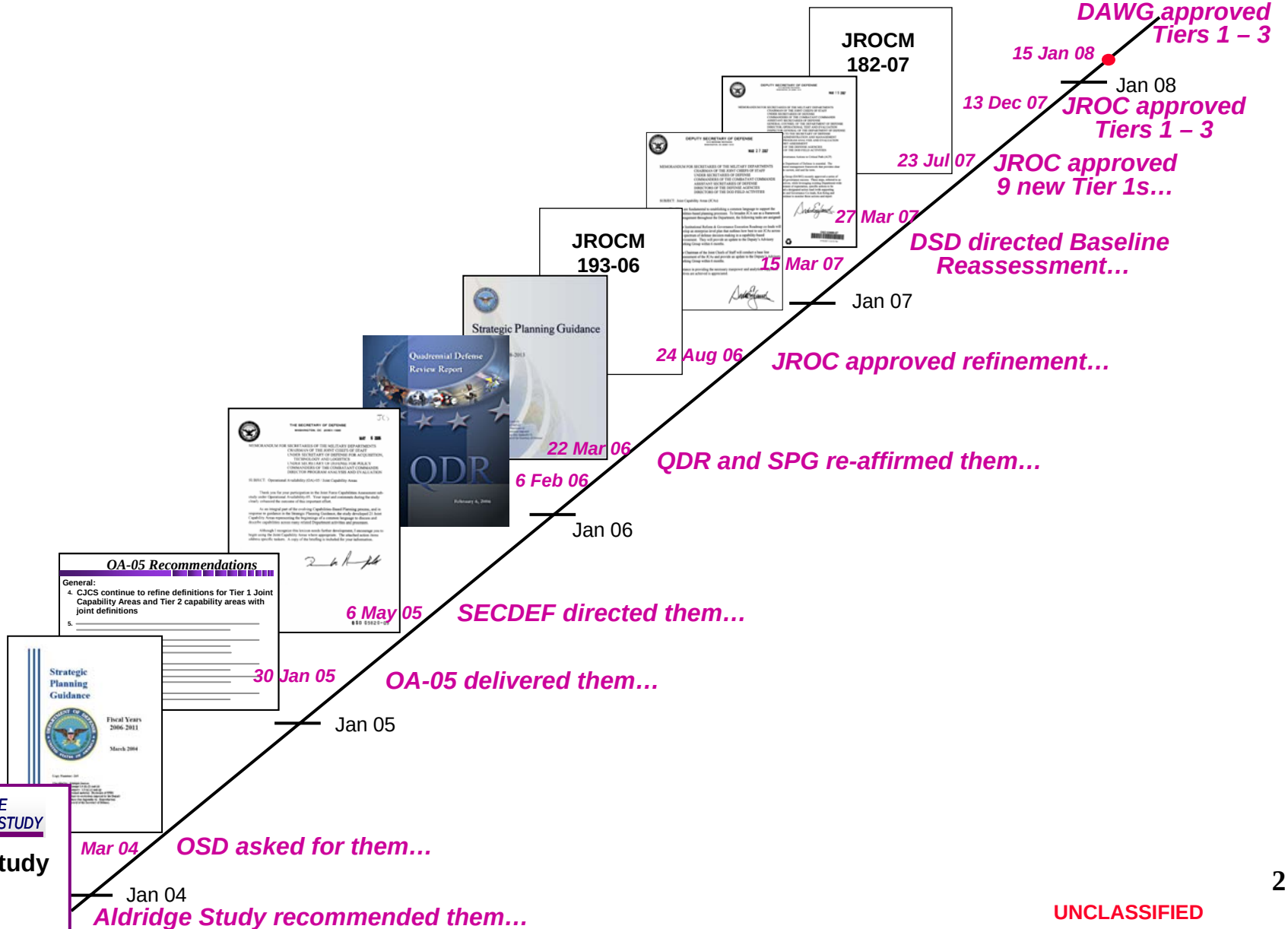
Presented to

Future of Precision Strike Conference

23 Jan 08

Mr Joe Bonnet
Deputy Director for Force Development & Integration
Joint Staff J-7

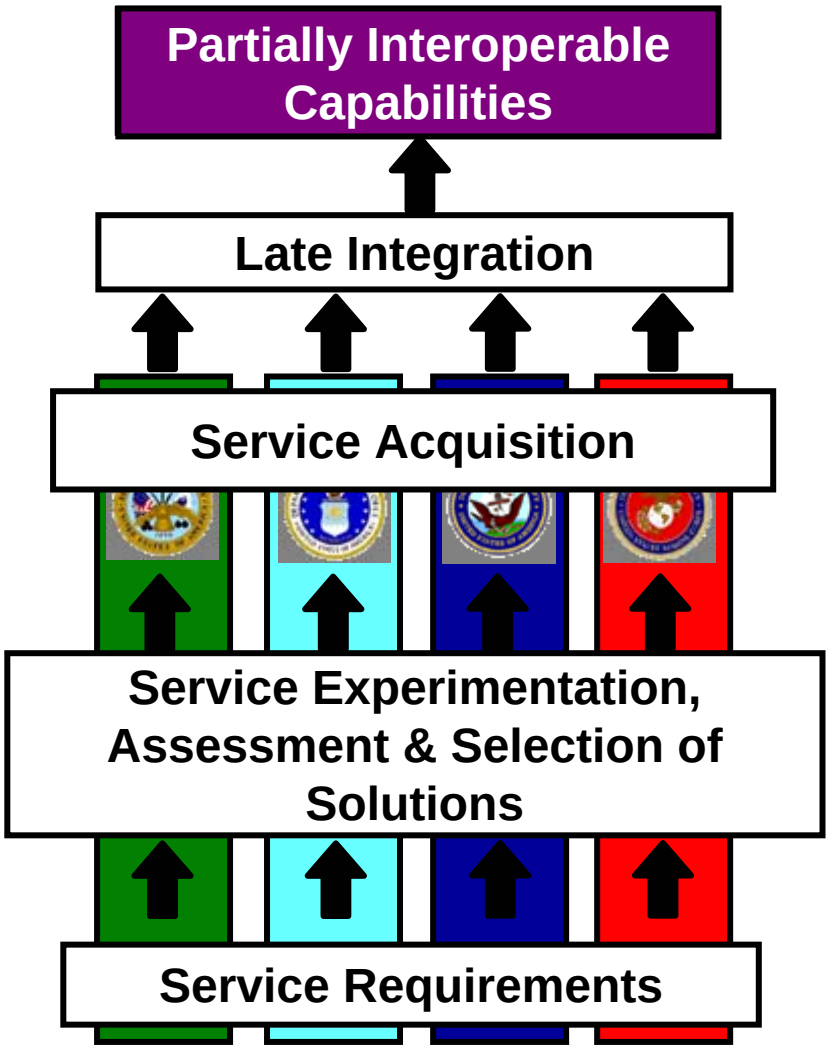
JCA Lineage

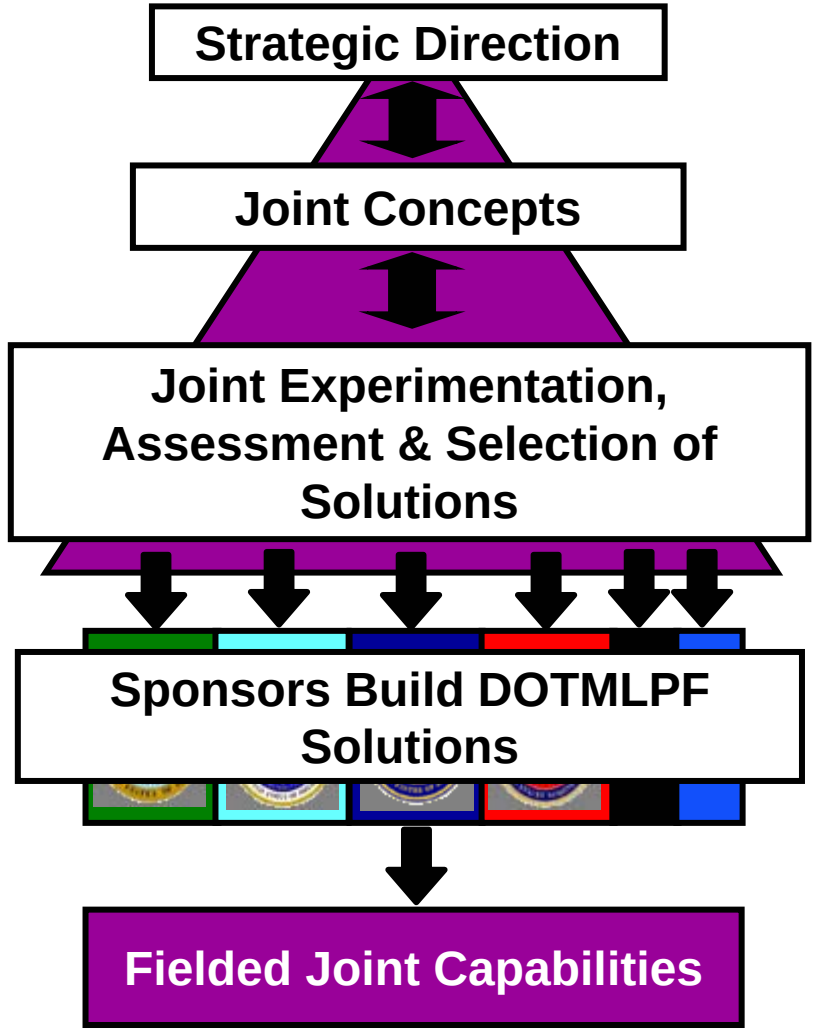


JOINT DEFENSE CAPABILITIES STUDY

Aldridge Study

Capabilities Based Approach





CBP Process Objectives

A top-down, competitive process that weighs options vs. resource constraints across a spectrum of challenges

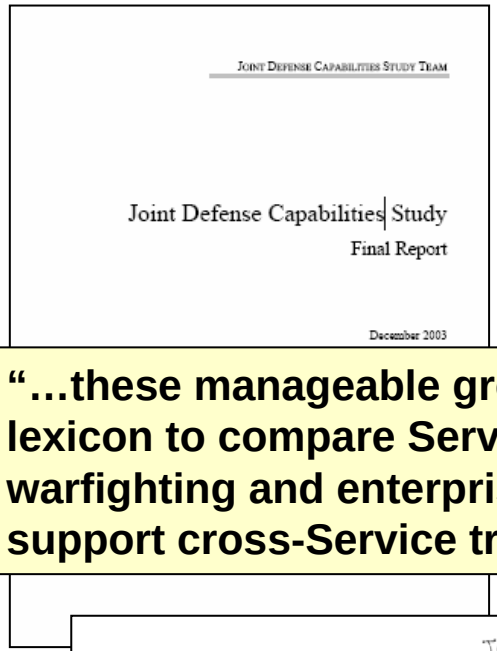
- **Link DoD decision-making to the Defense Strategy**
  - Apportion risk across external challenges – traditional, irregular, catastrophic, and disruptive
  - At the level of portfolios and current/future concepts
- **Inform risk tradespace – identify joint capability gaps, redundancies, and opportunities**
- **Facilitate the development of affordable capability portfolios that:**
  - Hedge against uncertainty
  - Increase costs to adversaries while suppressing our costs
- **Integrate and synchronize the requirements process, PPBE, and the acquisition system**

JCAs…What Are They?

"…integral part of the evolving Capabilities-Based Planning process…the beginnings of a common language to discuss and describe capabilities across many related Department activities and processes."
(SecDef Memo, 6 May 2005)

JCAs are collections of like DOD activities functionally grouped to support capability analysis, strategy development, investment decision making, capability portfolio management, and capabilities-based force development and operational planning.
(JCA Baseline Reassessment Terms of Reference)

JCA Intent



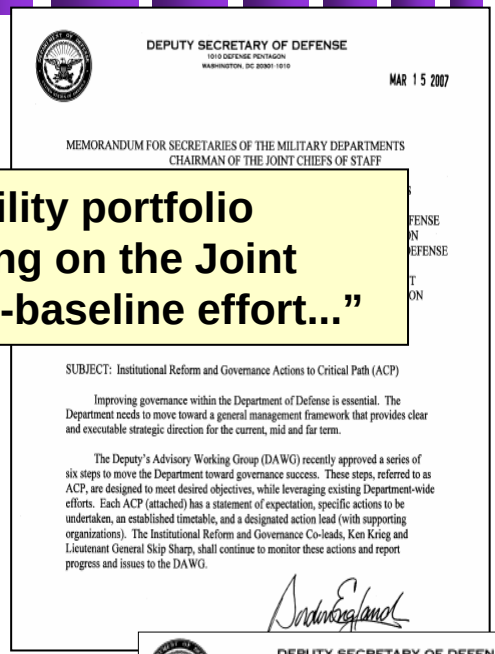
JOINT DEFENSE CAPABILITIES STUDY TEAM

Joint Defense Capabilities Study

Final Report

December 2003

"…these manageable groups provide a common lexicon to compare Service contributions to joint warfighting and enterprise support and, therefore, support cross-Service trades."



DEPUTY SECRETARY OF DEFENSE
1010 DEFENSE PENTAGON
WASHINGTON, DC 20301-1010

MAR 15 2007

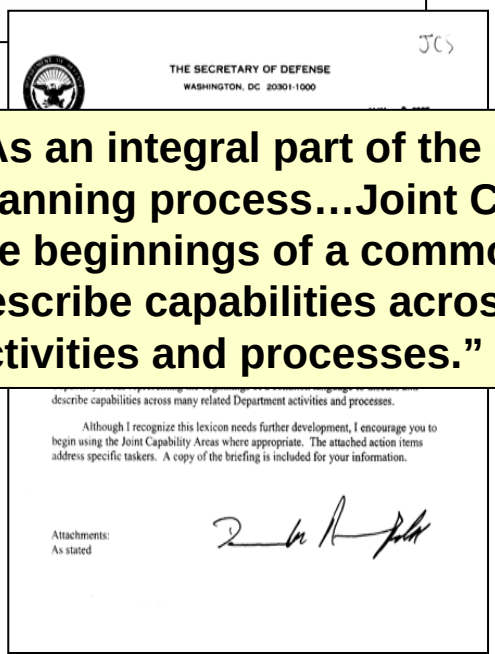
MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF

SUBJECT: Institutional Reform and Governance Actions to Critical Path (ACP)

Improving governance within the Department of Defense is essential. The Department needs to move toward a general management framework that provides clear and executable strategic direction for the current, mid and far term.

The Deputy's Advisory Working Group (DAWG) recently approved a series of six steps to move the Department toward governance success. These steps, referred to as ACP, are designed to meet desired objectives, while leveraging existing Department-wide efforts. Each ACP (attached) has a statement of expectation, specific actions to be undertaken, an established timetable, and a designated action lead (with supporting organizations). The Institutional Reform and Governance Co-leads, Ken Krieg and Lieutenant General Skip Sharp, shall continue to monitor these actions and report progress and issues to the DAWG.

"Develop a capability portfolio framework, building on the Joint Capability Area re-baseline effort..."



JCS

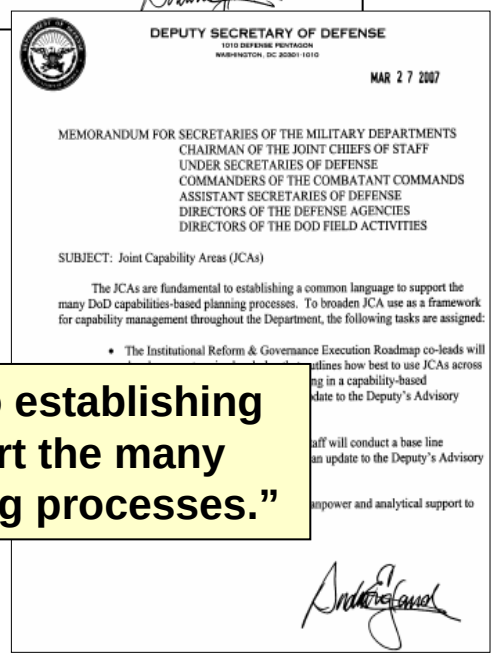
THE SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1000

describe capabilities across many related Department activities and processes.

Although I recognize this lexicon needs further development, I encourage you to begin using the Joint Capability Areas where appropriate. The attached action items address specific taskers. A copy of the briefing is included for your information.

Attachments:
As stated

"As an integral part of the evolving Capabilities-Based Planning process…Joint Capability Areas representing the beginnings of a common language to discuss and describe capabilities across many related Department activities and processes."



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MAR 27 2007

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
COMMANDERS OF THE COMBATANT COMMANDS
ASSISTANT SECRETARIES OF DEFENSE
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Joint Capability Areas (JCAs)

The JCAs are fundamental to establishing a common language to support the many DoD capabilities-based planning processes. To broaden JCA use as a framework for capability management throughout the Department, the following tasks are assigned:

- The Institutional Reform & Governance Execution Roadmap co-leads will

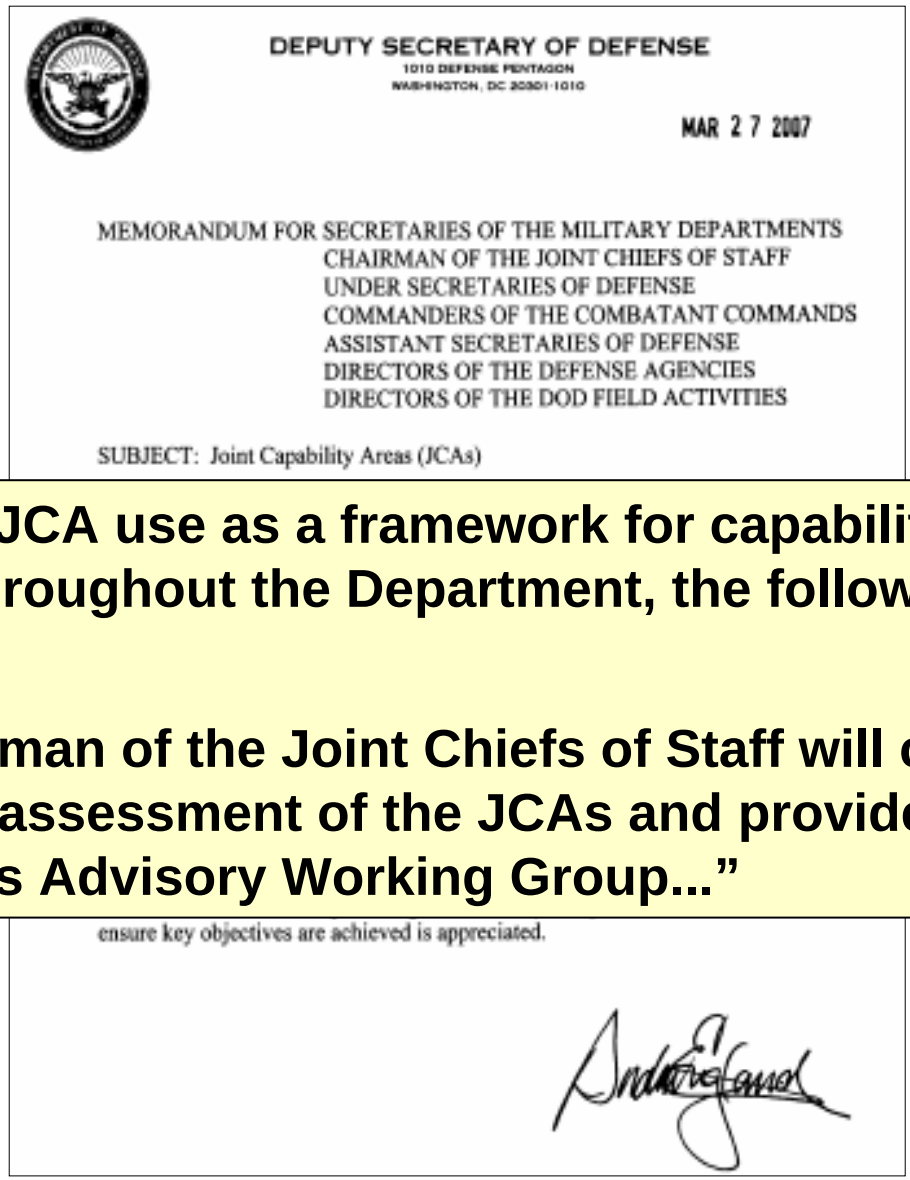
"The JCAs are fundamental to establishing a common language to support the many DoD capabilities-base planning processes."

What Problem Does JCAs Address?

- **DOD processes currently talk in five different languages…**
  - Policy talks in terms of strategic priorities
  - Programming talks in terms of appropriations and PEs
  - Planning talks in terms of force packages
  - Acquisition talks in terms of cost, schedule and performance parameters
  - Requirements talks in terms of capabilities and gaps
- **You cannot have an enterprise-wide capabilities-based strategy-to-task discussion without a common language**
- **JCAs have provided a rudimentary language which have some traction, but fall short of being ….**

DoD's Capabilities-Based Planning "Rosetta Stone"

JCA Baseline Reassessment Direction



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CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
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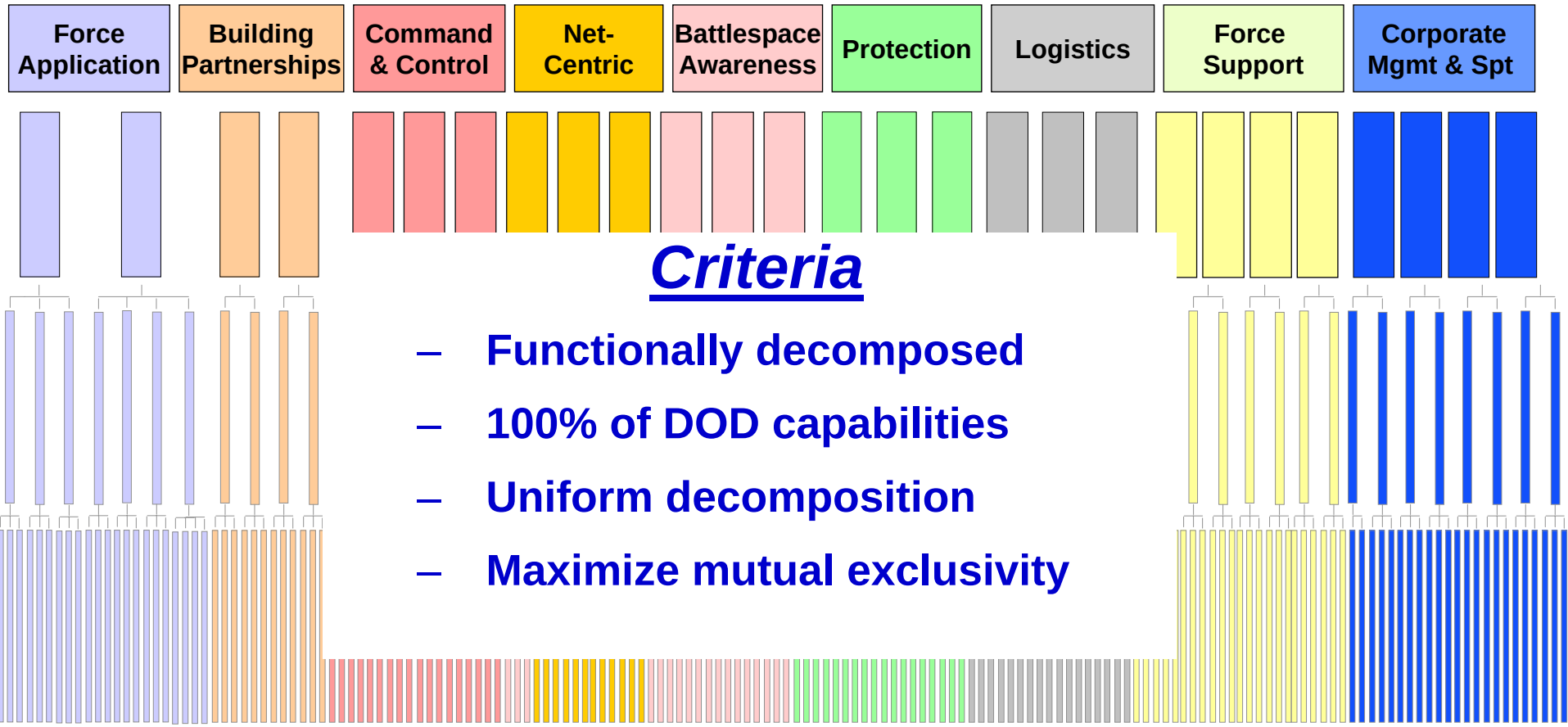
SUBJECT: Joint Capability Areas (JCAs)

ensure key objectives are achieved is appreciated.

"…To broaden JCA use as a framework for capability management throughout the Department, the following tasks are assigned:

- **The Chairman of the Joint Chiefs of Staff will conduct a base line reassessment of the JCAs and provide an update to the Deputy's Advisory Working Group..."**

JROC Decision on Top-level JCAs



Criteria

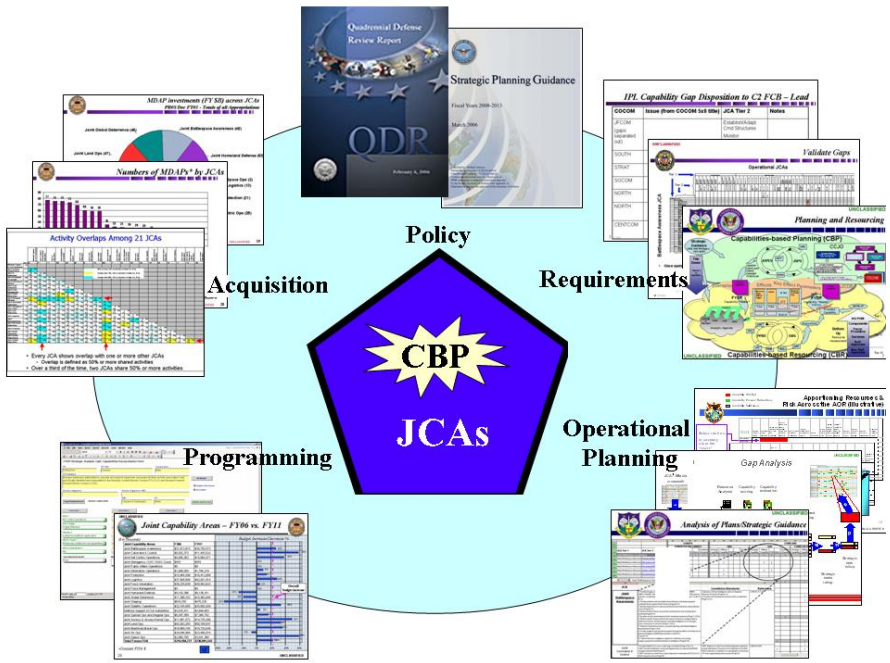
- Functionally decomposed
- 100% of DOD capabilities
- Uniform decomposition
- Maximize mutual exclusivity

Current JCA Usage

- Organizing construct for GDF & JPG
- Organizing construct for assuming risk / increasing focus
- Strategy to task analysis

- Operational to Functional Concept crosswalk
- JCIDS documents
- IPL submissions
- Capability Prioritization
- Capability gap assessments
- Lines of Joint Experimentation (LOJX)

- Matrix Mapping Tool mapping to MDAPS



- Joint Testing & Evaluation analysis construct
- Program Element mapped to JCAs

- Linking Plans to Resources (LPTR)
- Defense Readiness Reporting System (DRRS)
- Global Force Management
- Critical Infrastructure Program vulnerability analysis

Joint Operations Concepts

STRATEGIC GUIDANCE

Capstone Concept for Joint Operations (CCJO)
Broad statement of how to operate 8-20 years in the future

Joint Operating Concepts (JOC)
Operational design and capabilities

1. Homeland Security 1.0 (Feb 04)
   Homeland Defense and Civil Support 2.0 (in-progress)
2. Strategic Deterrence 1.0 (Feb 04)
   Deterrence Operations 2.0 (Aug 06)
3. Major Combat Operations 1.0 / 2.0 (Sep 04 / Aug 06)
4. Stability Operations 1.0 (Sep 04)
   Military Support to Stabilization, Security, Transition and Reconstruction Operations 2.0 (Aug 06)
5. Irregular Warfare 1.0 (Feb 07)
6. Shaping 1.0 (in-progress)

Operational Context

JCAs

Supp

Joint Functional Concepts (JFC)
Enduring functional capabilities

1. Battlespace Awareness (Dec 03) ✓
2. Command and Control (Feb 04) ✓
3. Force Application (Feb 04) ✓
4. Focused Logistics (Dec 03) ✓
5. Force Management (Jun 05) * ✓
6. Net-centric (Apr 05) ✓
7. Protection (Jun 04) ✓
8. Training (in-work) *

JCAs

Force Support * (+)
Building Partnerships
Corporate Mgmt & Spt

Joint Integrating Concepts (JIC)
JOC and/or JFC-derived tasks, conditions and standards

1. Global Strike (Jan 05)
2. Joint Forcible Entry Operations (Sep 04)
3. Joint Undersea Superiority (Jan 04)
4. Seabasing (Aug 05)
5. Integrated Air and Missile Defense (Dec 04)
6. Joint Logistics-Distribution (Dec 05)
7. Joint Command and Control (Aug 05)
8. Net-Centric Operational Environment (Oct 05)
9. Persistent ISR (in-progress)
10. Combating WMD (in-progress)

Mil Spt to SSTR JOC

Military Support to Stabilization, Security, Transition, and Reconstruction Operations Joint Operating Concept

Version 2.0

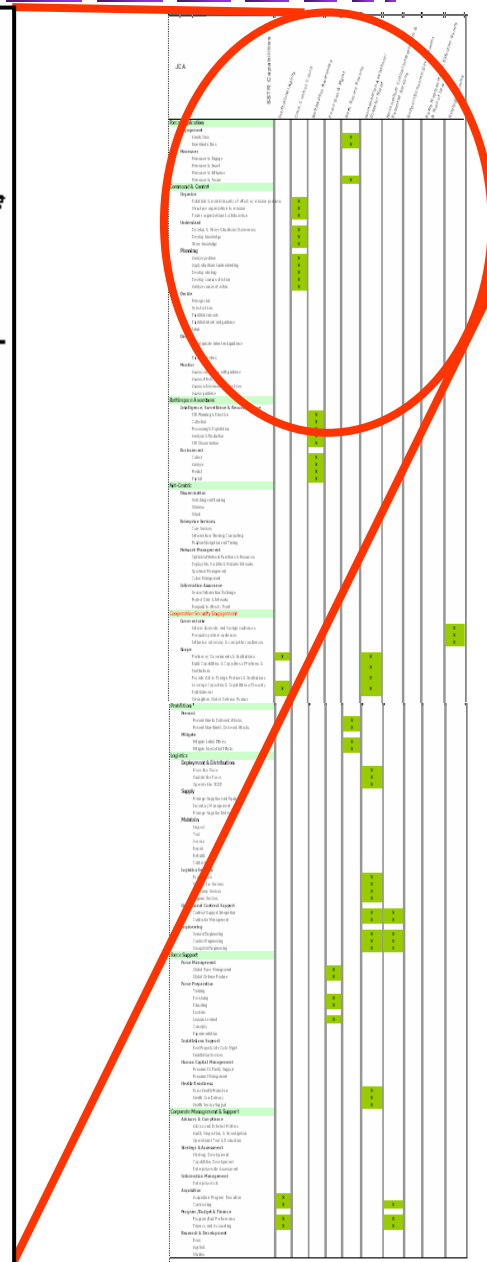
December 2006

Appendix C-2: Joint Capability Area Matrix

SSTR Capability		Most Relevant JCA(s)		Comparison - Implications
		Tier 1	Tier 2	
	U.S. Government Institutional Agility. U.S. government institutions must be able to distribute funds, goods, and services rapidly and efficiently to successfully conduct SSTR operations	Joint Command & Control Joint Logistics Joint Shaping Joint Stability Operations Joint Interagency/IGO/NGO Coordination	Exercise Command Leadership; Manage Risk Joint Deployment/Rapid Distribution; Agile Sustainment; Joint Theater Logistics; Multinational Logistics Building Military Partner Capability; Building Military Partner Capacity Basic Services Restoration; Humanitarian Assistance; Reconstruction All Tier 2 Joint IA/IGO/MN/NGO Coordination JCAs	JCAs don't specifically address distribution of funds
	The ability for DOD to systemically plan, program, budget, and allocate funds for SSTR operations	Joint Force Management	Future Capability Identification; Planning	JCAs don't cover PPB&E cycle
	The ability for U.S. commanders to have access to contingency funds that can be spent in a flexible and adaptive manner.	Joint Force Management	Future Capability Identification; Planning	JCAs don't cover PPB&E cycle
	The ability for U.S. commanders to rapidly bring to bear reliable, expert foreign and domestic contractor support a wide variety of SSTR undertakings.	No Tier 1 JCAs	No Tier 2 JCAs	JCAs don't address contingency funds; ties to Tier 2 Restoration of Basic Services under Joint Stability Operations.

SSTR JOC - 10 Critical Capabilities - Aligned to JCAs

JCA	SSTR Capabilities: Institutional Agility	Cmd, Control, Coord	Battlespace Awareness	Force Gen & Mgmt	Safe, Secure Environ	Humanitarian Assistance/ Disaster Relief	Reconstitute Critical Infrastructure & Essential Services	Support Economic Development	Estab Representative, Effective Gvmnt & Rule of Law	Strategic Comms
Force Application										
Engagement										
Kinetic fires					X					
Non-Kinetic fires					X					
Maneuver										
Maneuver to Engage										
Maneuver to Insert										
Maneuver to Influence										
Maneuver to Secure					X					
Command & Control										
Organize										
Establish & maintain unity of effort w/ mission partners		X								
Structure organization to mission		X								
Foster organizational collaboration		X								
Understand										
Develop & Share Situational Awareness		X								
Develop knowledge		X								
Share knowledge		X								
Planning										
Analyze problem		X								
Apply situational understanding		X								
Develop strategy		X								
Develop courses of action		X								
Analyze course of action		X								
Decide										
Manage risk										
Select actions										
Establish rule sets										
Establish intent and guidance										
Intuit										
Direct										
Communicate intent and guidance										
Task										
Establish metrics										
Monitor										
Assess compliance with guidance										
Assess effects										
Assess achievement of objectives										

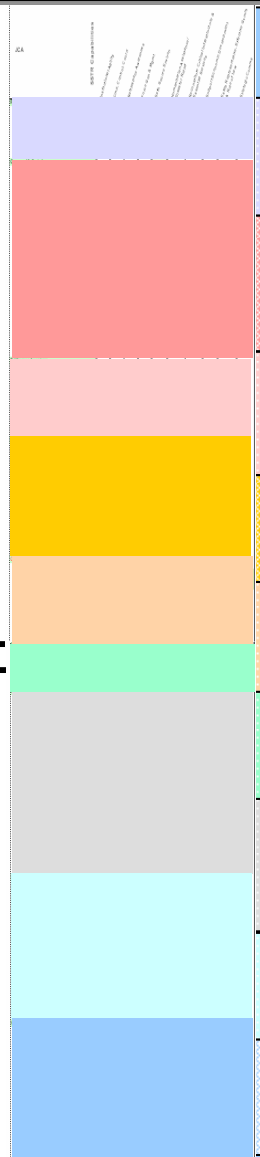


Vision

Joint Operating Concepts (JOC)

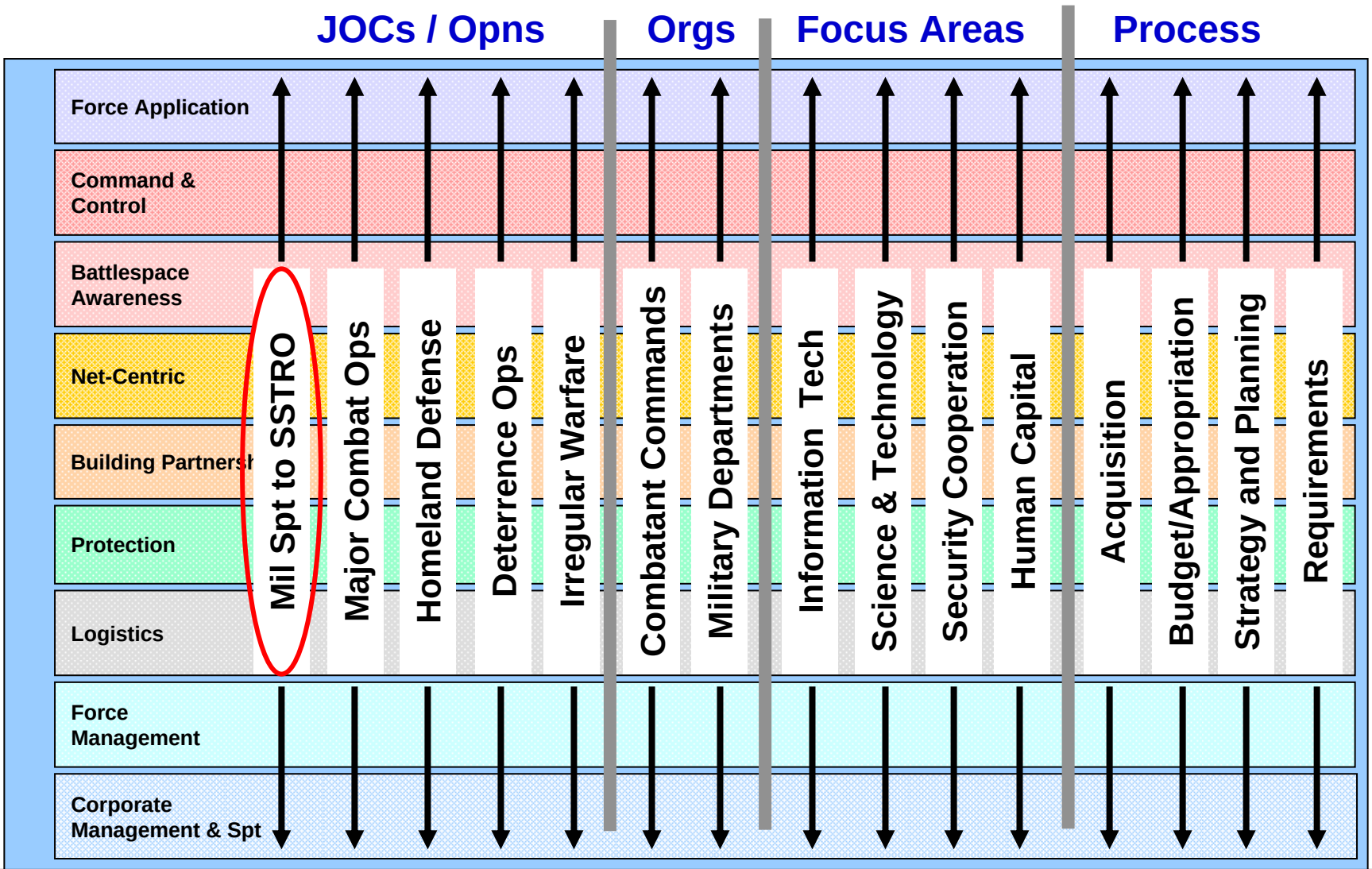
Joint Functional Concepts (JFC)
Functional capabilities

- Force Application
- Command & Control
- Battlespace Awareness
- Net-Centric
- Building Partnerships
- Protection
- Logistics
- Force Management
- Corporate Management & Spt



- Mil Support to SSTRO
- Irregular Warfare
- Shaping
- Deterrence Operations
- Major Combat Operations
- Homeland Defense & Civil Support

Vision



Functionally aligned JCAs simplify the framework & increases utility across DOD by facilitating cross-referenced views by operations, components, processes, and activities

LPTR : Informing Apportionment of Risk & Resources Across Plans

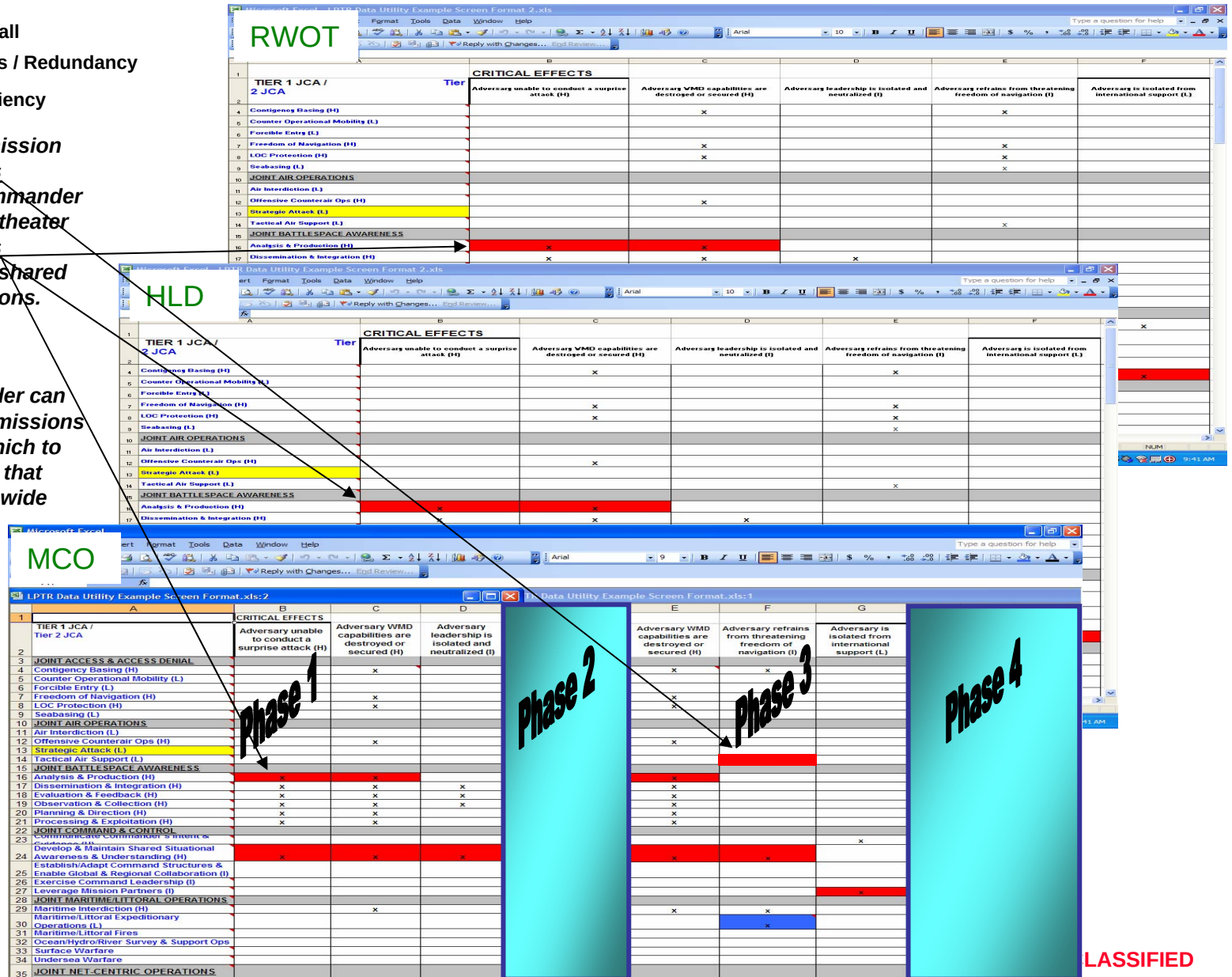
Capability Shortfall

Capability Excess / Redundancy

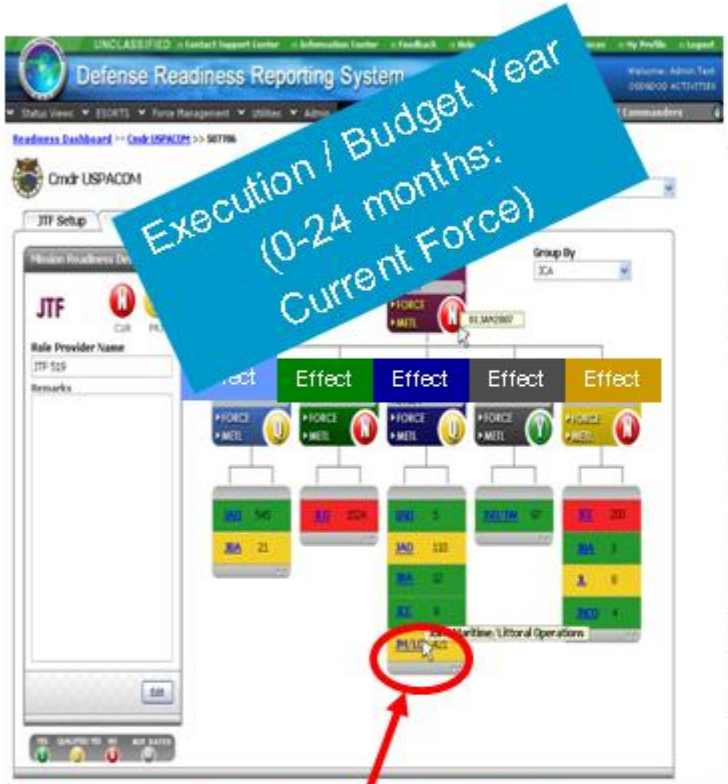
Capability Sufficiency

Rather than reduce mission risk by mitigating this capability gap, a Commander may prefer to reduce theater risk by mitigating this capability gap that is shared across multiple missions.

Similarly, a Commander can look across multiple missions to identify areas in which to accept increased risk that have minimal theater-wide impact.



Near-, Mid-, and Long-term Assessments



Execution / Budget Year (0-24 months; Current Force)

FYDP (2-7 years; Programmed Force)

FYDP+ (7+ years; Projected Future Force)

JCA Tier 1	JC	
Joint Battlespace Awareness		
	Collection	
	Neutral Fr	x
	Exploitation	x
	Modeling, Simulation, and Forecasting	x
	Knowledge Management	x
Joint Information Operations		
	OPSEC	x
	Computer Network Ops (CND, CNA	x
	PSYOP	x
	Military Deception	x
	Electronic Warfare	x
	Information Operations	x
Joint Strategic Deterrence		
	Overseas Presence	x
	Force Projection	x
	Global Strike	x
Joint Maritime/Littoral Control Operations		
	Surface Warfare	
	Undersea Warfare	
	Maritime Interdiction Operations	x
Joint Air Control Operations		
	OCA	
	DCA	x

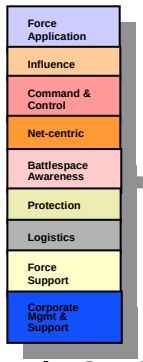
Shortfall

JCA Tier 1	J	
Joint Battlespace Awareness		
	Collection	
	Neutral Fr	x
	Exploitation	x
	Modeling, Simulation, and Forecasting	x
	Knowledge Management	x
Joint Information Operations		
	OPSEC	x
	Computer Network Ops (CND, CNA	x
	PSYOP	x
	Military Deception	x
	Electronic Warfare	x
	Information Operations	x
Joint Strategic Deterrence		
	Overseas Presence	x
	Force Projection	x
	Global Strike	x
Joint Maritime/Littoral Control Operations		
	Surface Warfare	
	Undersea Warfare	
	Maritime Interdiction Operations	x
Joint Air Control Operations		
	OCA	
	DCA	x

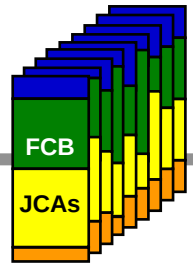
Sufficiency

Undersea Warfare Assessments

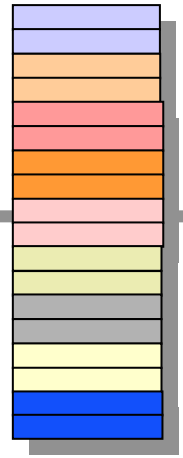
Capability Prioritization Path



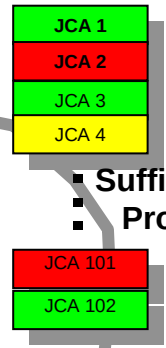
Top Level JCA Construct (DAWG Approved) May 07



CPP Test Case Prioritization JCB Oct 07



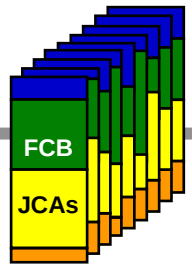
JCA Decomposition JROC Approved Dec 07



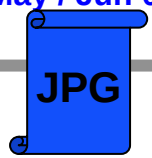
Sufficiency/Capacity Proof of Concept Dec 07

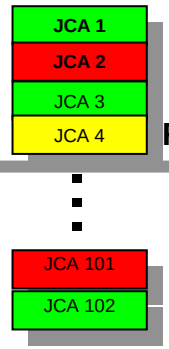
POM Builds Feb-Aug 08

POM Build



JPG Developed OSD(PA&E) May / Jun 08

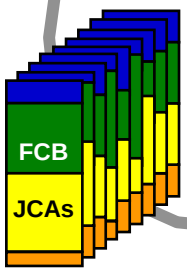




Sufficiency & Capacity Results (w/OA-08) Apr/May 08

OA 08

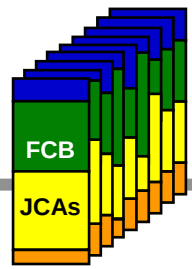
OA 08 Case Results DAWG Approved Feb 08



CPP Round 2 Target: Jul-Sep 08

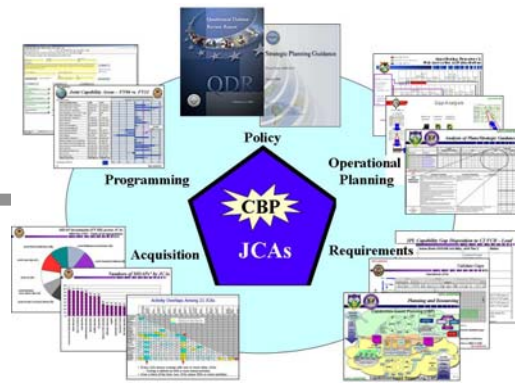
POM Lock

POM Lock Aug 08



CPP Assessment JROC (Phase I,II) Target: Jun 08

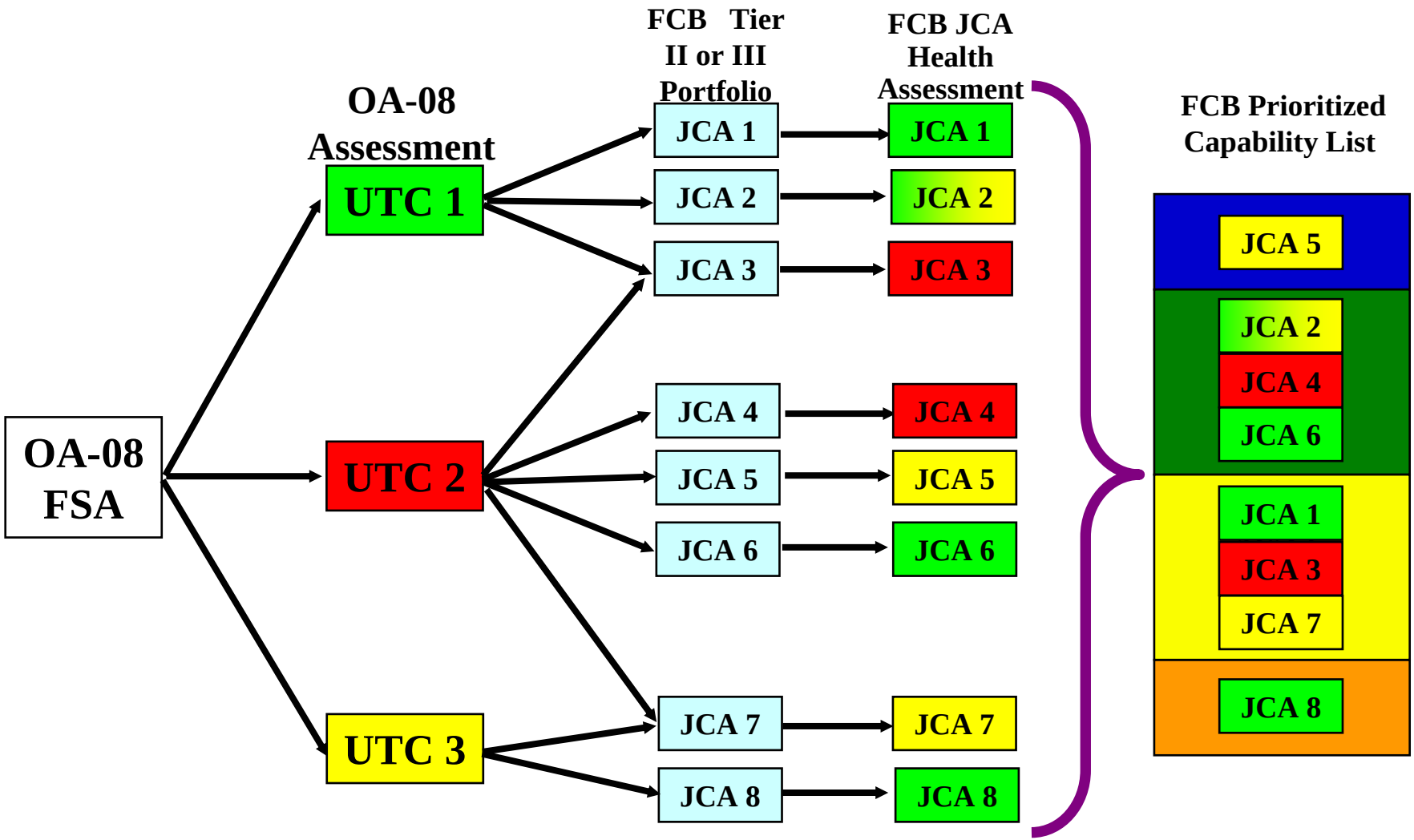
CPP Round 2 Brief to JROC Target: Oct 08



Targets:
POM 2011
PBR IP Guidance
GDF Oct 08

POM2012
NSS 09
NMS 09
GDF 09
GEF 09

Sufficiency and Capacity Simplistic View



Overlap in UTCs and JCAs makes this process significantly more difficult

Joint Capability Development Process

Policy

Strategic Planning Guidance/ National Military Strategy

Concepts

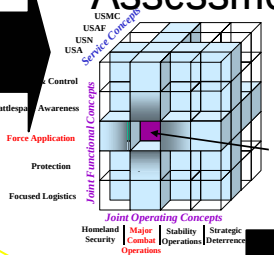
Joint Operations Concepts

Joint Operating Concepts

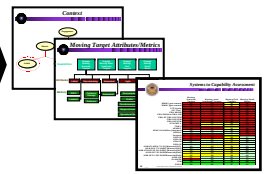
Joint Functional Concepts

Joint Integrating Concepts

Capability Assessment

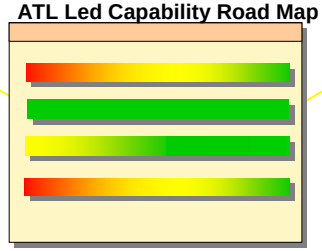


Functional Area
Functional Needs
Functional Solution



assesses potential programmed capabilities in a warfighting operational context

ATL Led Capability Road Map

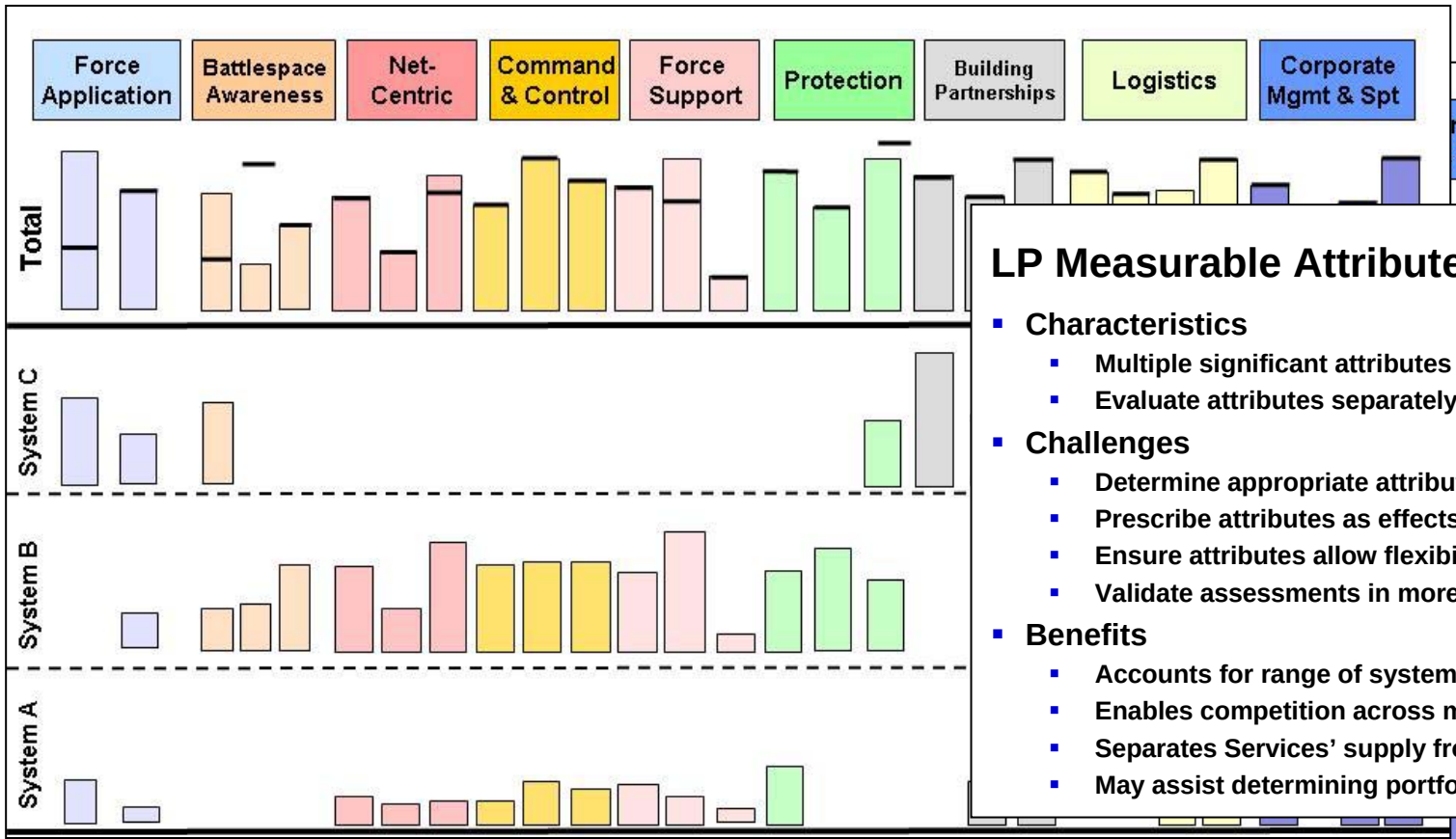


Provide Operational Capability with fielded Systems to meet Warfighter requirements

Process that decomposes from policy guidance to warfighting concepts to Joint Capability Areas, to fielded material and non-material solutions

Proposed LP Approach

- For each major system, determine capability contribution to each JCA by scenario (1-n)
- Assess total capability contribution (supply) against OPLAN (demand) by scenario



LP Measurable Attributes (Metrics)

- **Characteristics**
  - Multiple significant attributes of each JCA
  - Evaluate attributes separately for each scenario
- **Challenges**
  - Determine appropriate attributes
  - Prescribe attributes as effects (behavioral & function)
  - Ensure attributes allow flexibility in means and ways
  - Validate assessments in more detailed campaign models
- **Benefits**
  - Accounts for range of system contributions
  - Enables competition across means to achieve effect
  - Separates Services' supply from COCOMs' demands
  - May assist determining portfolio funding level

Assesses Gaps and Overages at the Enterprise Level

Illustration of the Preemptive Goal Programming Solution Space – Robust Solution across Capabilities

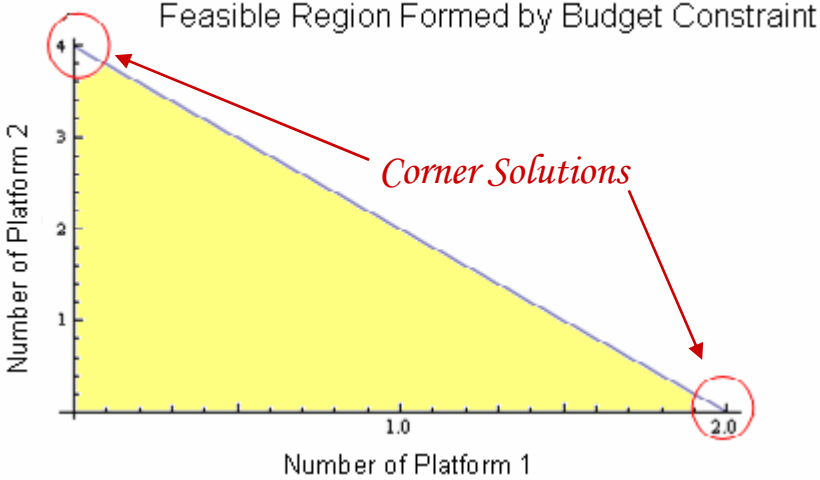
Problem Data:

		Rate of Contribution to Capability		
		C1	C2	C3
System	Platform 1	10	0	20
	Platform 2	10	5	0

Priority	Goal
1st	C2 >= 10
2nd	C1 >= 20
3rd	C3 >= 20
4th	C1 >= 30

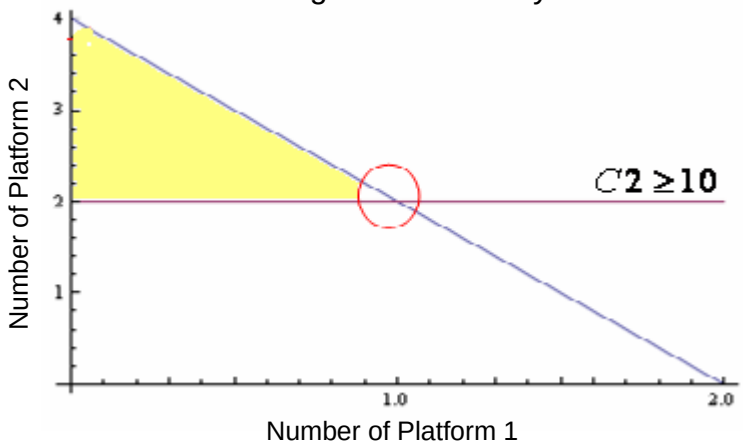
Weighted Goal Program

Feasible Region Formed by Budget Constraint



Preemptive Goal Program

Feasible Region Reduced by First Goal



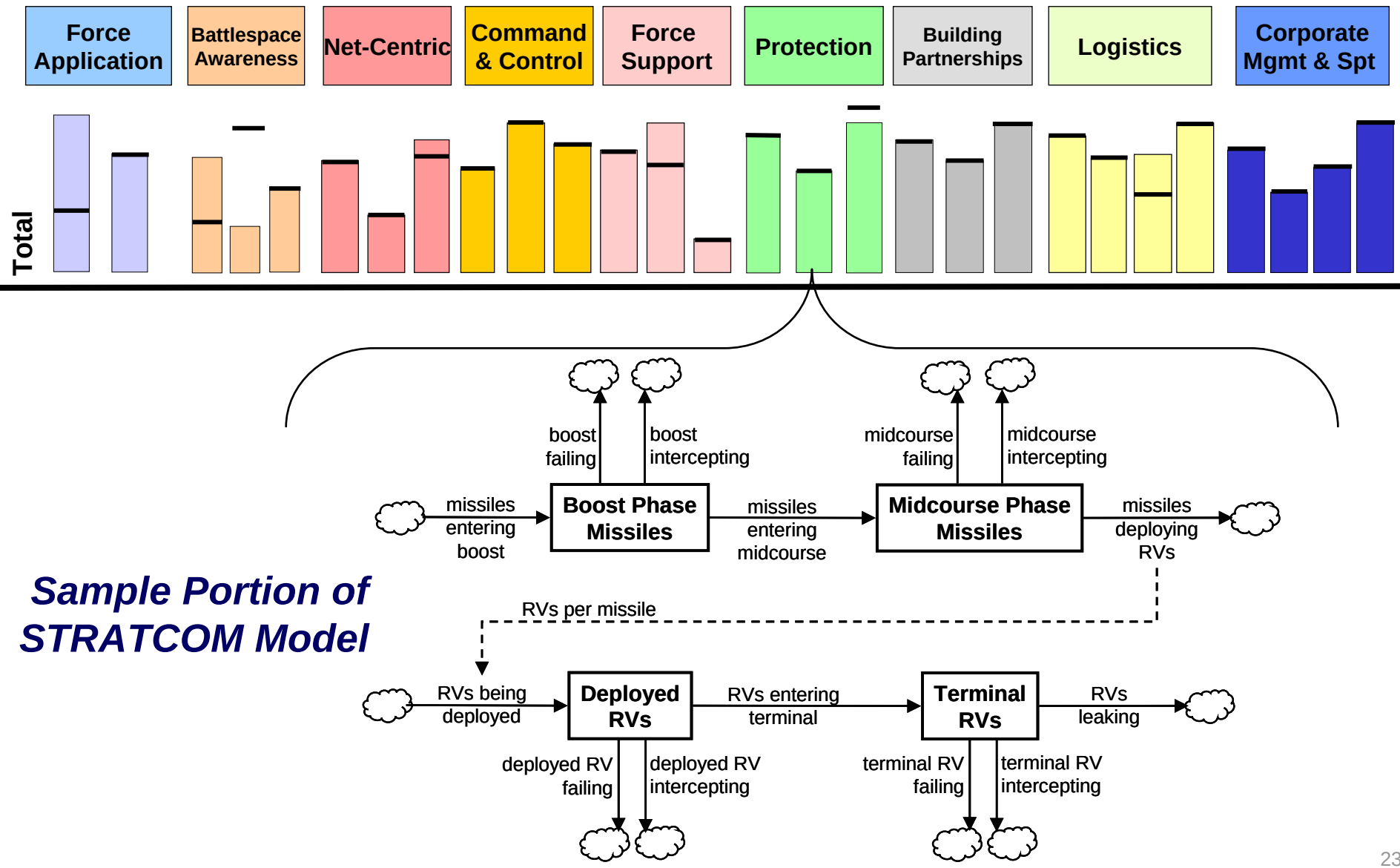
Weighted Goal Program: Table of Corner Solutions						
		Systems		Capability Levels		
		Platform 1	Platform 2	C1	C2	C3
Solutions	S1	2	0	20	**0**	**40**
	S2	0	4	**40**	15	**0**

Note: Each solution has **best** and **worst** capability values.

Preemptive Goal Program: Solution from Addition of Goal Constraint						
		Systems		Capability Levels		
		Platform 1	Platform 2	C1	C2	C3
Solution	S3	1	2	**30**	**10**	**20**

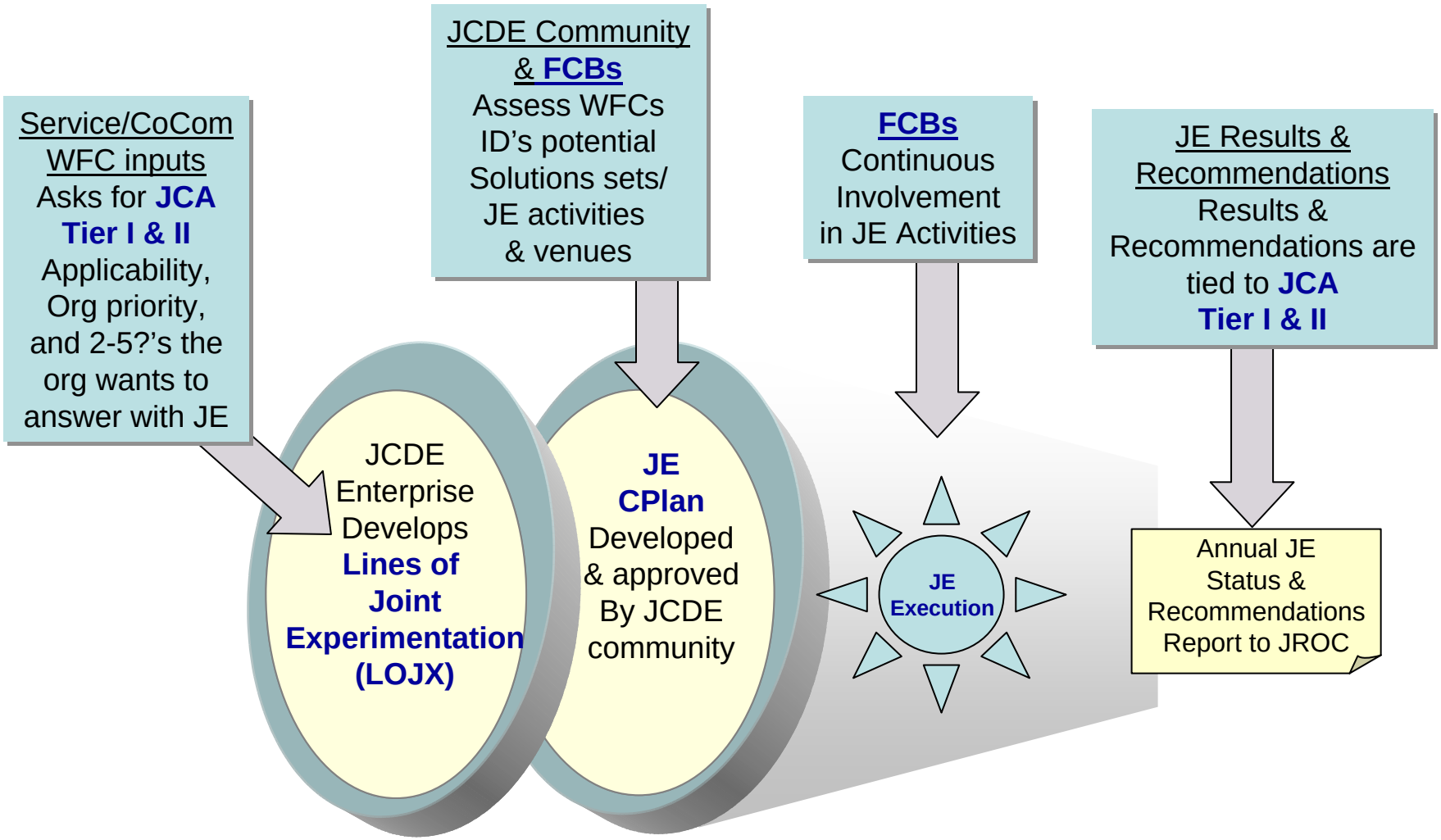
Note: The new solution meets all the goals with **good**, not **best**, values across the goals.

System Capability Contribution to JCAs
Scenario 1

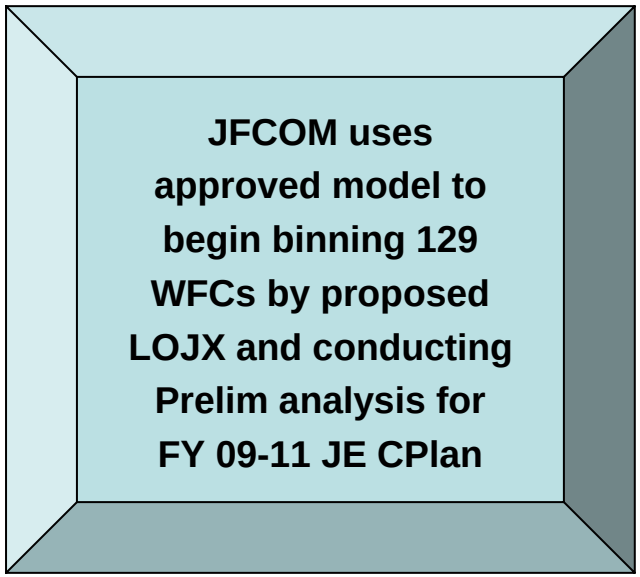


Sample Portion of STRATCOM Model

JCAs / JE Integration



Recommended Lines of Joint Experimentation (LOJX) by JCDE Community



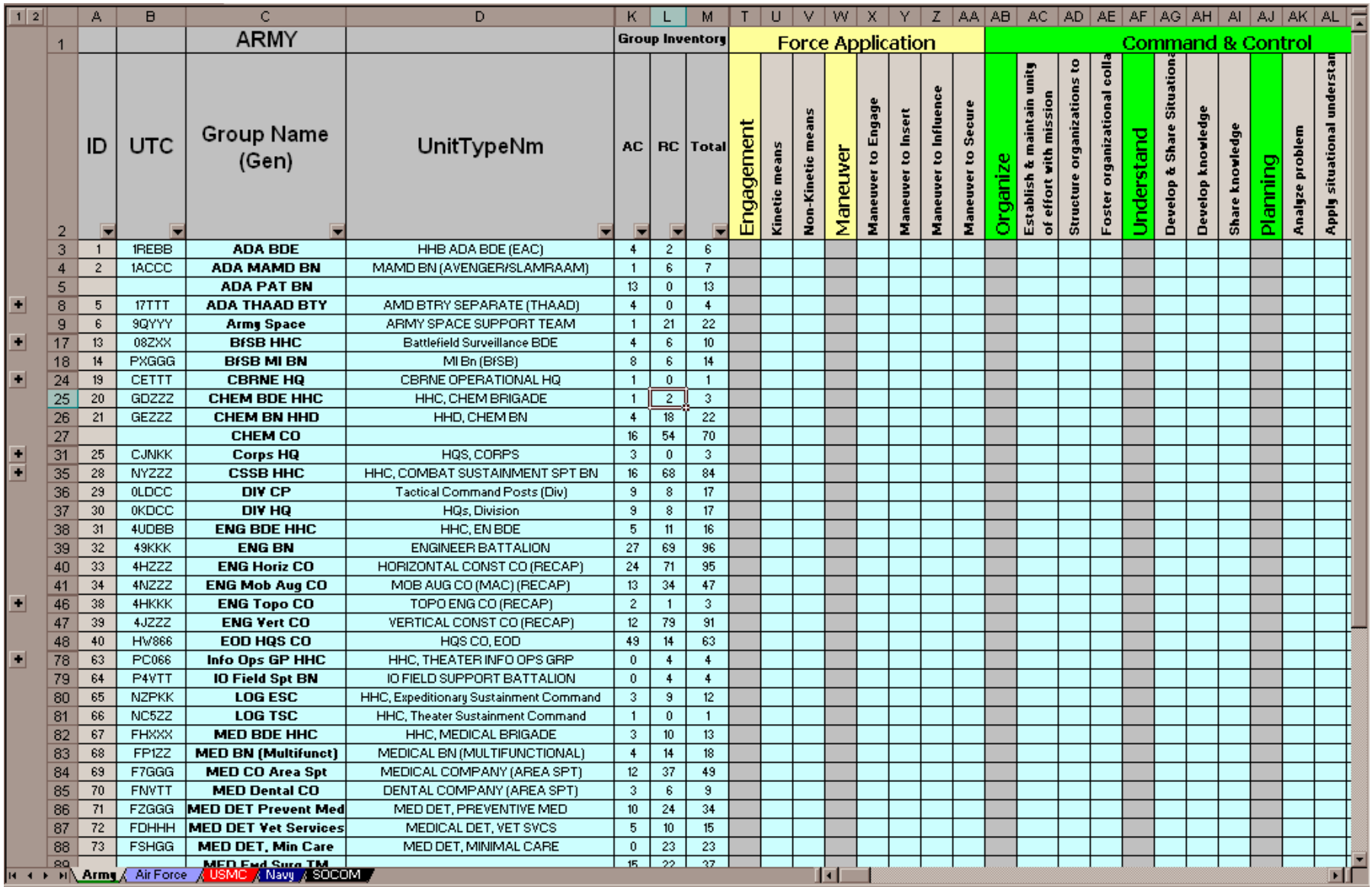
- Command and Control
- Net-Centric
- Force Application
- Battlespace Awareness
- Force Projection
- Logistics
- Protection
- Building Partnerships
- Homeland Defense
- Combating WMD
- Irregular Warfare
- Cyberspace Operations

Way Forward

- 6 Dec: JROC
- 13 Dec: JROC Executive Session
- 15 Jan: DAWG
- Post DAWG Actions
  - Support DJS & PDUSD(P) in developing Departmental JCA implementation plan
  - Follow-on refinement; directed by flag level steering group, and approved by DJS & PDUSD(P)
  - Deploy JCA Management System (JCAMS)
    - Web-base authoritative JCA database
    - Rebaselined JCAs mapped to initial 21 tier 1 & 240 tier 2 JCAs
  - Update JCA linkages
    - UJTLs
    - PEs
    - MDAPs

Questions?

UTC to JCA Mapping



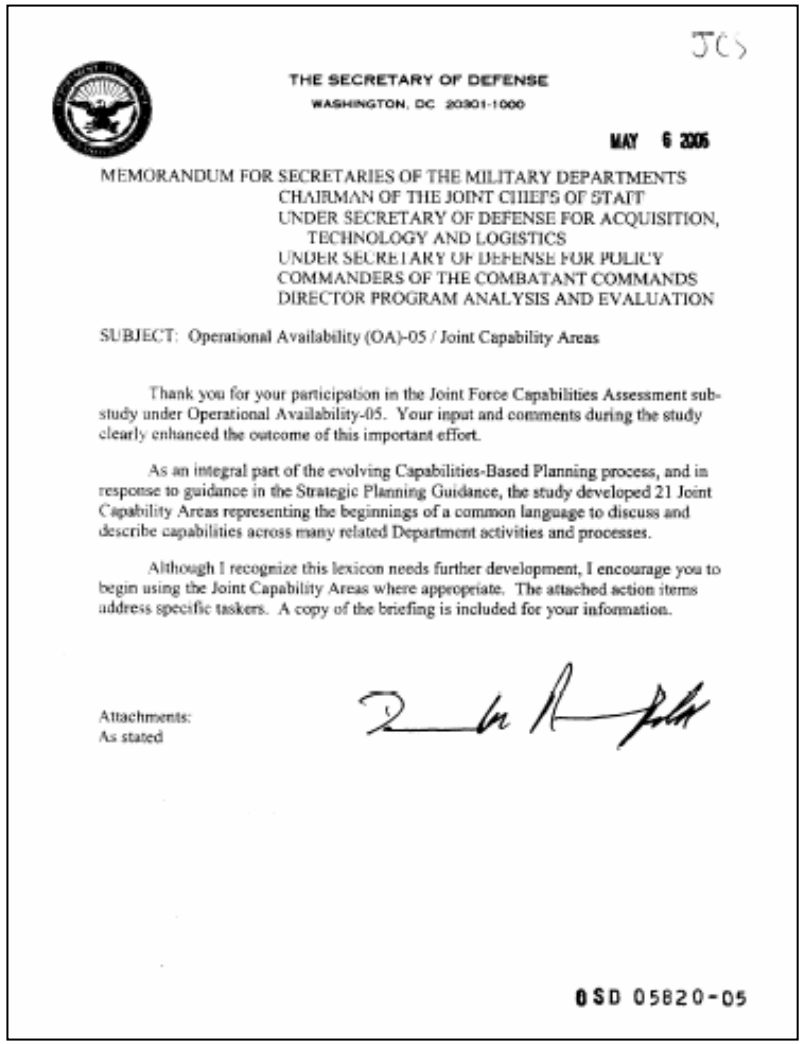
	A	B	C	D	K	L	M	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
1			ARMY		Group Inventory			Force Application								Command & Control											
2	ID	UTC	Group Name (Gen)	UnitTypeNm	AC	RC	Total	Engagement	Kinetic means	Non-Kinetic means	Maneuver	Maneuver to Engage	Maneuver to Insert	Maneuver to Influence	Maneuver to Secure	Organize	Establish & maintain unity of effort with mission	Structure organizations to	Foster organizational colla	Understand	Develop & Share Situation	Develop knowledge	Share knowledge	Planning	Analyze problem	Apply situational understan
3	1	1REBB	ADA BDE	HHB ADA BDE (EAC)	4	2	6																			
4	2	1ACCC	ADA MAMD BN	MAMD BN (AVENGER/SLAMRAAM)	1	6	7																			
5			ADA PAT BN		13	0	13																			
8	5	17TTT	ADA THAAD BTY	AMD BTRY SEPARATE (THAAD)	4	0	4																			
9	6	9QYYY	Army Space	ARMY SPACE SUPPORT TEAM	1	21	22																			
17	13	08ZXX	BfSB HHC	Battlefield Surveillance BDE	4	6	10																			
18	14	PXGGG	BfSB MI BN	MI Bn (BfSB)	8	6	14																			
24	19	CETTT	CBRNE HQ	CBRNE OPERATIONAL HQ	1	0	1																			
25	20	GDZZZ	CHEM BDE HHC	HHC, CHEM BRIGADE	1	2	3																			
26	21	GEZZZ	CHEM BN HHD	HHD, CHEM BN	4	18	22																			
27			CHEM CO		16	54	70																			
31	25	CJNKK	Corps HQ	HQS, CORPS	3	0	3																			
35	28	NYZZZ	CSSB HHC	HHC, COMBAT SUSTAINMENT SPT BN	16	68	84																			
36	29	0LDCC	DIV CP	Tactical Command Posts (Div)	9	8	17																			
37	30	0KDCC	DIV HQ	HQs, Division	9	8	17																			
38	31	4UDBB	ENG BDE HHC	HHC, EN BDE	5	11	16																			
39	32	49KKK	ENG BN	ENGINEER BATTALION	27	69	96																			
40	33	4HZZZ	ENG Horiz CO	HORIZONTAL CONST CO (RECAP)	24	71	95																			
41	34	4NZZZ	ENG Mob Aug CO	MOB AUG CO (MAC) (RECAP)	13	34	47																			
46	38	4HKKK	ENG Topo CO	TOPO ENG CO (RECAP)	2	1	3																			
47	39	4JZZZ	ENG Vert CO	VERTICAL CONST CO (RECAP)	12	79	91																			
48	40	HW866	EOD HQS CO	HQS CO, EOD	49	14	63																			
78	63	PC066	Info Ops GP HHC	HHC, THEATER INFO OPS GRP	0	4	4																			
79	64	P4VTT	IO Field Spt BN	IO FIELD SUPPORT BATTALION	0	4	4																			
80	65	NZPKK	LOG ESC	HHC, Expeditionary Sustainment Command	3	9	12																			
81	66	NC5ZZ	LOG TSC	HHC, Theater Sustainment Command	1	0	1																			
82	67	FHXXX	MED BDE HHC	HHC, MEDICAL BRIGADE	3	10	13																			
83	68	FP1ZZ	MED BN (Multifunct)	MEDICAL BN (MULTIFUNCTIONAL)	4	14	18																			
84	69	F7GGG	MED CO Area Spt	MEDICAL COMPANY (AREA SPT)	12	37	49																			
85	70	FNVTT	MED Dental CO	DENTAL COMPANY (AREA SPT)	3	6	9																			
86	71	FZGGG	MED DET Prevent Med	MED DET, PREVENTIVE MED	10	24	34																			
87	72	FDHHH	MED DET Vet Services	MEDICAL DET, VET SVCS	5	10	15																			
88	73	FSHGG	MED DET, Min Care	MED DET, MINIMAL CARE	0	23	23																			
89			MED Fwd Surg TM		15	22	37																			

Army | Air Force | USMC | Navy | SOCOM

SecDef JCA Memo

"Although I recognize this lexicon needs further development, I encourage you to begin using the Joint Capability Areas where appropriate. The attached action items address specific taskers."

- **Incorporate the JCAs where appropriate across acquisition activities including the DAB, capability roadmaps, and technology investment decision opportunities**
- **Incorporate the JCAs as appropriate into future Defense Planning Scenarios (DPSs) and Strategic Planning Guidance (SPG)**
- **Refine Tier 2 layer of capabilities lexicon as required to provide sufficient detail to enhance usefulness**
- **Use the capabilities lexicon in the continued evolution of the Joint Capabilities Integration Development System (JCIDS) where appropriate**
- **Integrate the capabilities lexicon into the future Universal Joint Task List (UJTL)**
- **Incorporate the JCA into evolving Global Force Management (GFM) and Joint Force Provider (JFP) initiatives where appropriate**



JCS

THE SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1000

MAY 6 2005

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS
UNDER SECRETARY OF DEFENSE FOR POLICY
COMMANDERS OF THE COMBATANT COMMANDS
DIRECTOR PROGRAM ANALYSIS AND EVALUATION

SUBJECT: Operational Availability (OA)-05 / Joint Capability Areas

Thank you for your participation in the Joint Force Capabilities Assessment sub-study under Operational Availability-05. Your input and comments during the study clearly enhanced the outcome of this important effort.

As an integral part of the evolving Capabilities-Based Planning process, and in response to guidance in the Strategic Planning Guidance, the study developed 21 Joint Capability Areas representing the beginnings of a common language to discuss and describe capabilities across many related Department activities and processes.

Although I recognize this lexicon needs further development, I encourage you to begin using the Joint Capability Areas where appropriate. The attached action items address specific taskers. A copy of the briefing is included for your information.

Attachments:
As stated

OSD 05820-05

JROCM 182-07

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THE JOINT STAFF
WASHINGTON, D.C. 20318-8000

JOINT REQUIREMENTS OVERSIGHT COUNCIL

JROCM 182-07
23 July 2007

MEMORANDUM FOR DISTRIBUTION

Subject: Joint Capability Area Baseline Reassessment

1. The Joint Requirements Oversight Council (JROC) approved a functional restructuring of the Joint Capability Areas. The following nine top level Joint Capability Areas were approved: Force Application, Influence, Command and Control, Net-Centric, Battlespace Awareness, Protection, Logistics, Force Support, and Corporate Management and Support.

2. The JROC requests assistance from addressees in providing the necessary manpower and analytical support to ensure key objectives are achieved.

E. P. GIAMBASTIANI
Admiral, US Navy
Vice Chairman
of the Joint Chiefs of Staff

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Commander, US Pacific Command
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Commander, US Transportation Command
Vice Chief of Staff, US Army
Vice Chief of Naval Operations
Vice Chief of Staff, US Air Force

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Background Study Guidance

JOINT DEFENSE CAPABILITIES STUDY

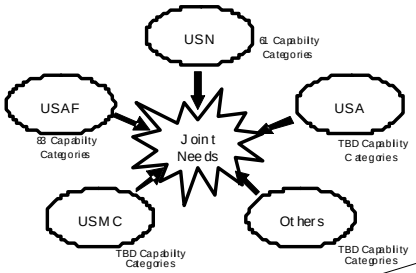
The Problem Today

If you want to answer…

- **What? How Much? When?** **Then…**

At the Department level, you need to:

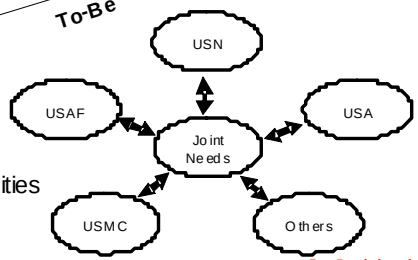
- Elevate the discussion above the platform and "single solution" level
- Communicate consistently, with a shared vision and common language
- Have a single set of facts and assumptions to guide analysis and decisions



- Currently no linkage to commonly defined Joint capabilities
- Difficult to do cross-Service capability trades
- Services define Joint capability needs

AS-IS

To-Be



- Joint community defines Joint needs
- Allows Services to map to Joint capabilities
- Facilitates analysis by capability

Pre-Decisional

Joint Defense Capabilities Study ("The Aldridge Study") – Jan 04

FY 06-11 Strategic Planning Guidance (Mar 04)

OA-05 Study

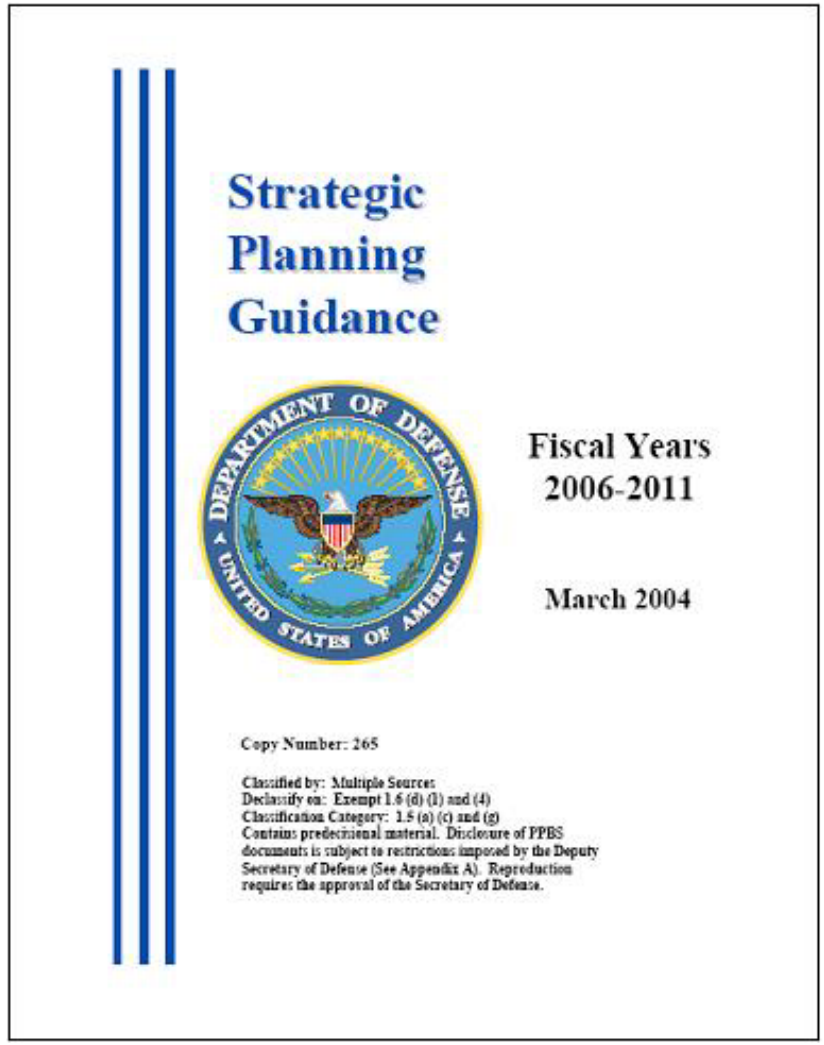
Joint Force Capabilities Assessment (JFCA) Sub-Study language: ***"identify, organize and prioritize capabilities required for the Defense Strategy." (S: 30 Jan 05)***

What Needs To Be Done

- Reach a common definition of “capability” and associated terms
- Identify capability categories (functional and operational)
- Develop a hierarchy of capability categories that support:
  - Cross Service trades
  - Strategy guidance articulation
  - Inclusion of operational and support capabilities
  - Gap analyses and evaluation of program contributions to the capability
  - Assessment of program execution
- Develop a compatible planning and programming framework
- Foster a “capabilities culture” that considers divestiture in tandem with initiatives; integrates risk; considers near and far term needs; is fiscally responsible

SPG '04

(U) Joint Force Capabilities Assessment. Taking into account the modular forces and capability equivalency substitution framework tasked later in this document (see Section IV, Global Force Management), the OA 05 study will identify, organize, and prioritize capabilities required for the Defense Strategy. The identification of joint force requirements will be based on both warfighting analyses and rotational methodologies.


Strategic Planning Guidance

Fiscal Years 2006-2011

March 2004

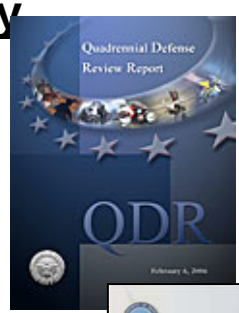
Copy Number: 265

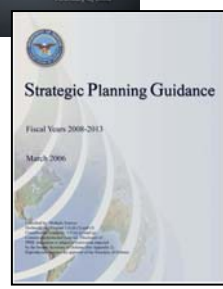
Classified by: Multiple Sources
Declassify on: Exempt 1.6 (d) (1) and (4)
Classification Category: 1.5 (a) (c) and (g)
Contains predecisional material. Disclosure of PPBS documents is subject to restrictions imposed by the Deputy Secretary of Defense (See Appendix A). Reproduction requires the approval of the Secretary of Defense.

Recent Strategic Direction - 2006 QDR & SPG

- **Reaffirms Department's shift from Threat-Based Planning to <u>Capabilities-Based Planning</u>**
- **<u>Links JCAs</u> specifically to <u>joint capability portfolio</u> concept**
- **Emphasizes the need to <u>manage</u> the Department <u>via joint capability portfolios</u> to meet President & Combatant Commanders' needs**
  - **Initial effort includes 3 JCAs**

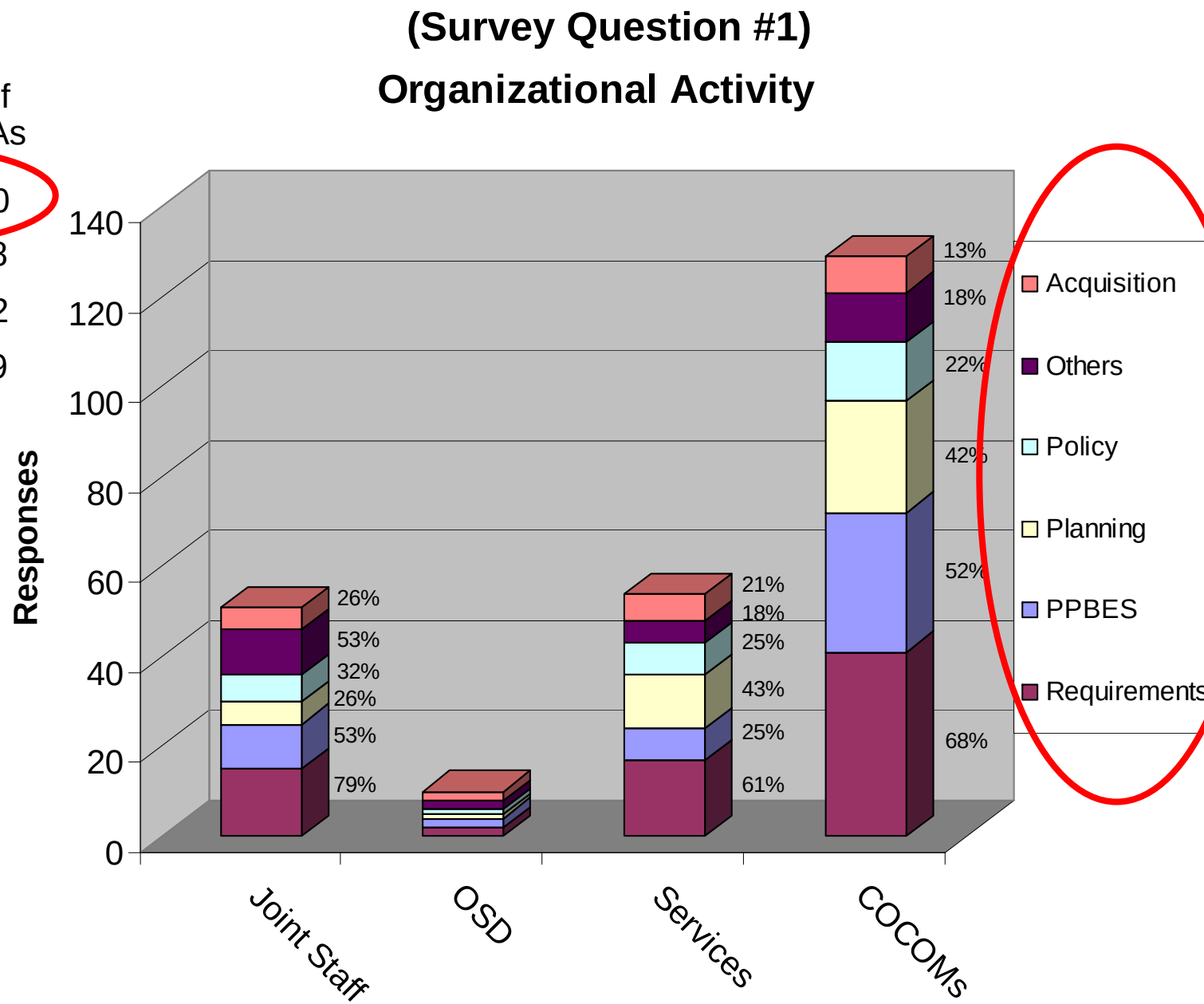
    (Joint C2, Joint Net Centric Operations, Joint Space Operations*)
  - **Plans to expand to other JCAs**
- **Lauds PACOM's efforts (Linking Plans to Resources (LPTR)) to map resource needs to plans and operations**
  - **Working to expand program to enable Department-wide assessment of JCAs**





* DAWG deleted Space Operations; added Battlespace Awareness & Joint Logistics

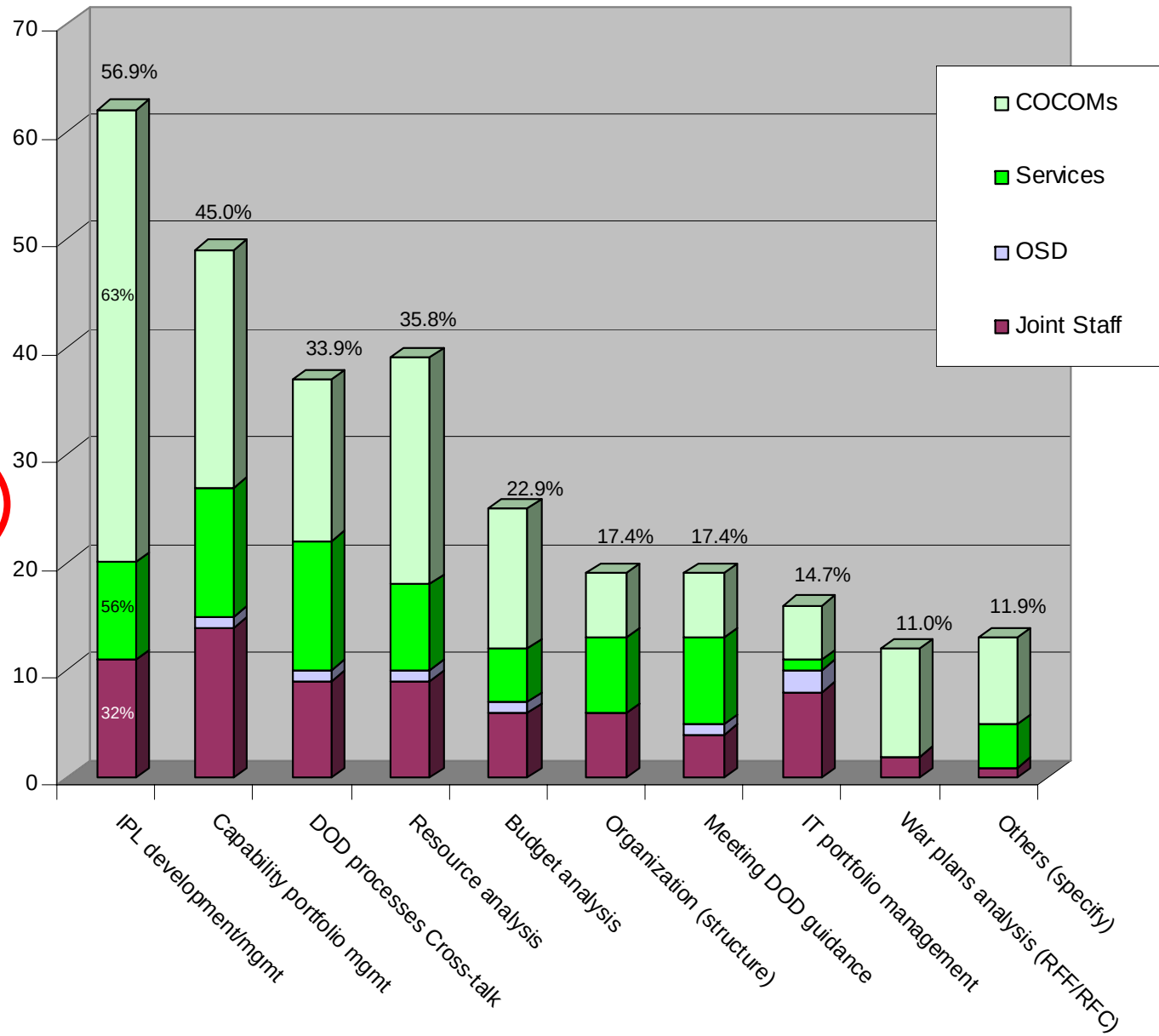
- 130 respondents of which 109 use JCAs
  - COCOMs – 60
  - Services – 28
  - OSD – 2
  - Joint Staff – 19



(Survey Question # 2 / 2a)

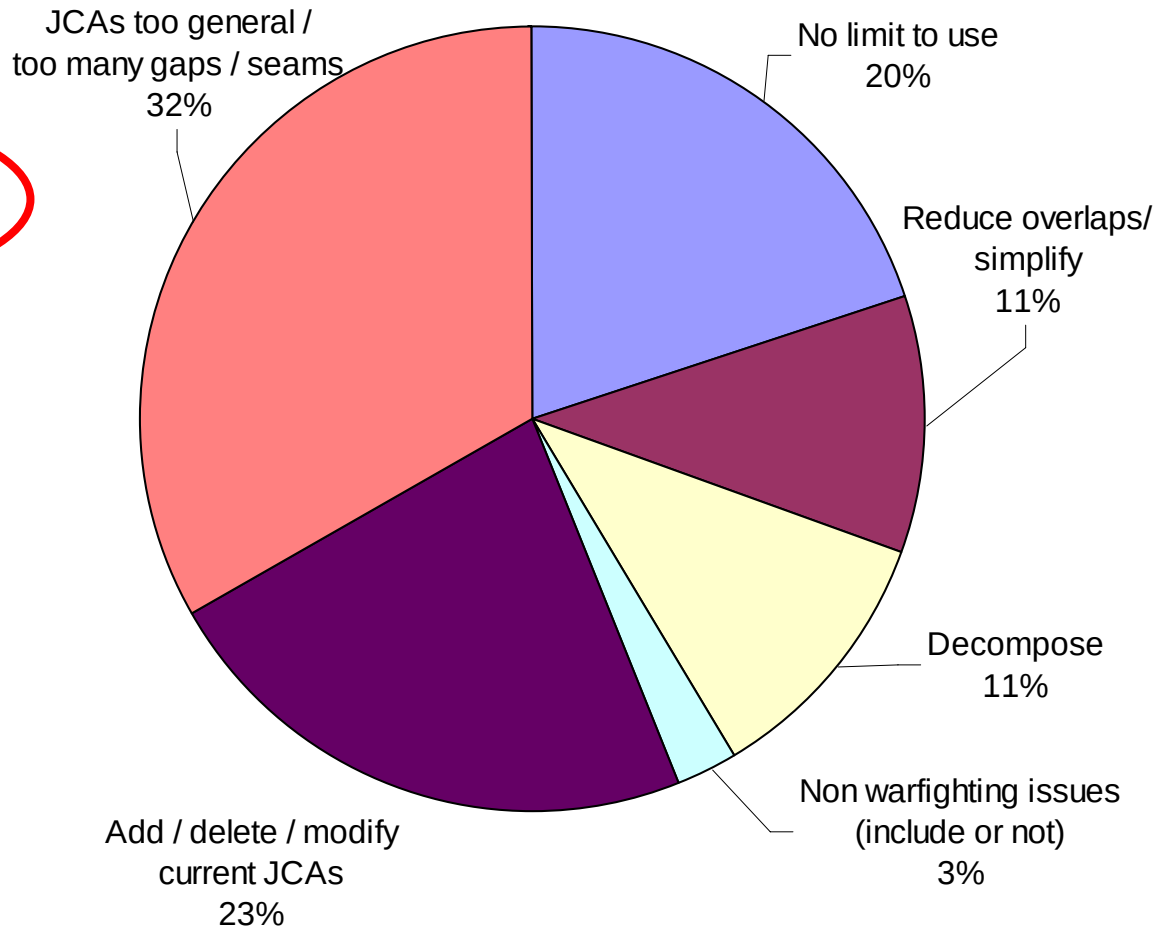
How an organization benefits from and uses JCAs

- JCAs being used across all activities
- Cross-talk between activities beginning
- Preponderance of use seems to be in requirements and portfolio management
- Use is based on utility rather then DoD directive



Written comments discussing how JCAs have limited an organizations use and suggestions for improvement (Survey Question #2b)

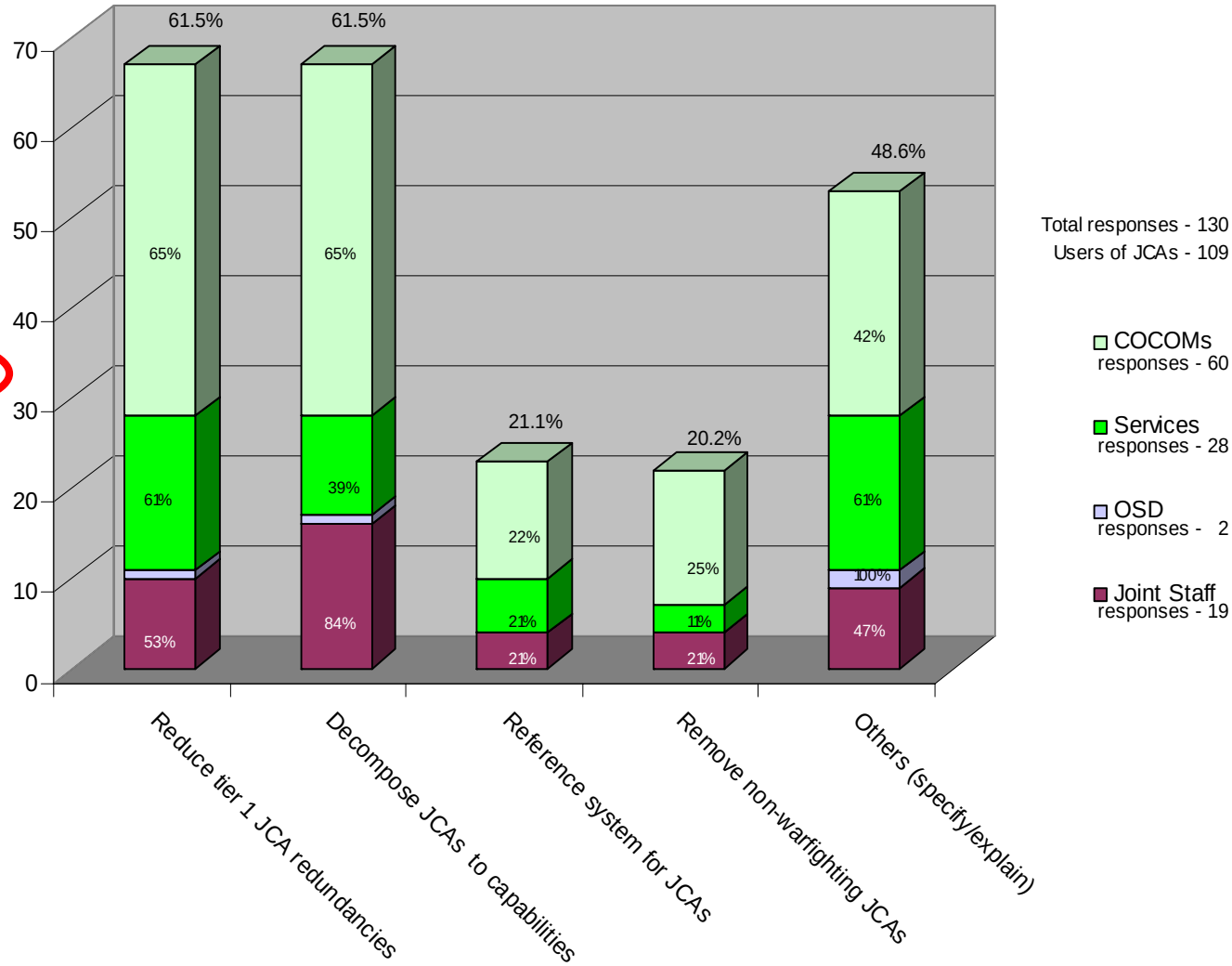
- 75 survey respondents had written comments
- 43% of respondents indicate JCAs need additional detail *(too general + decompose)*
- Reduce overlap and decompose comments mirror check blocks
- No common theme for “add / delete / modify”. All address individual “issues of the day”
  - Combating WMD
  - IED Defeat
  - Force Readiness
  - Homeland Defense binning



(Survey Question #3)

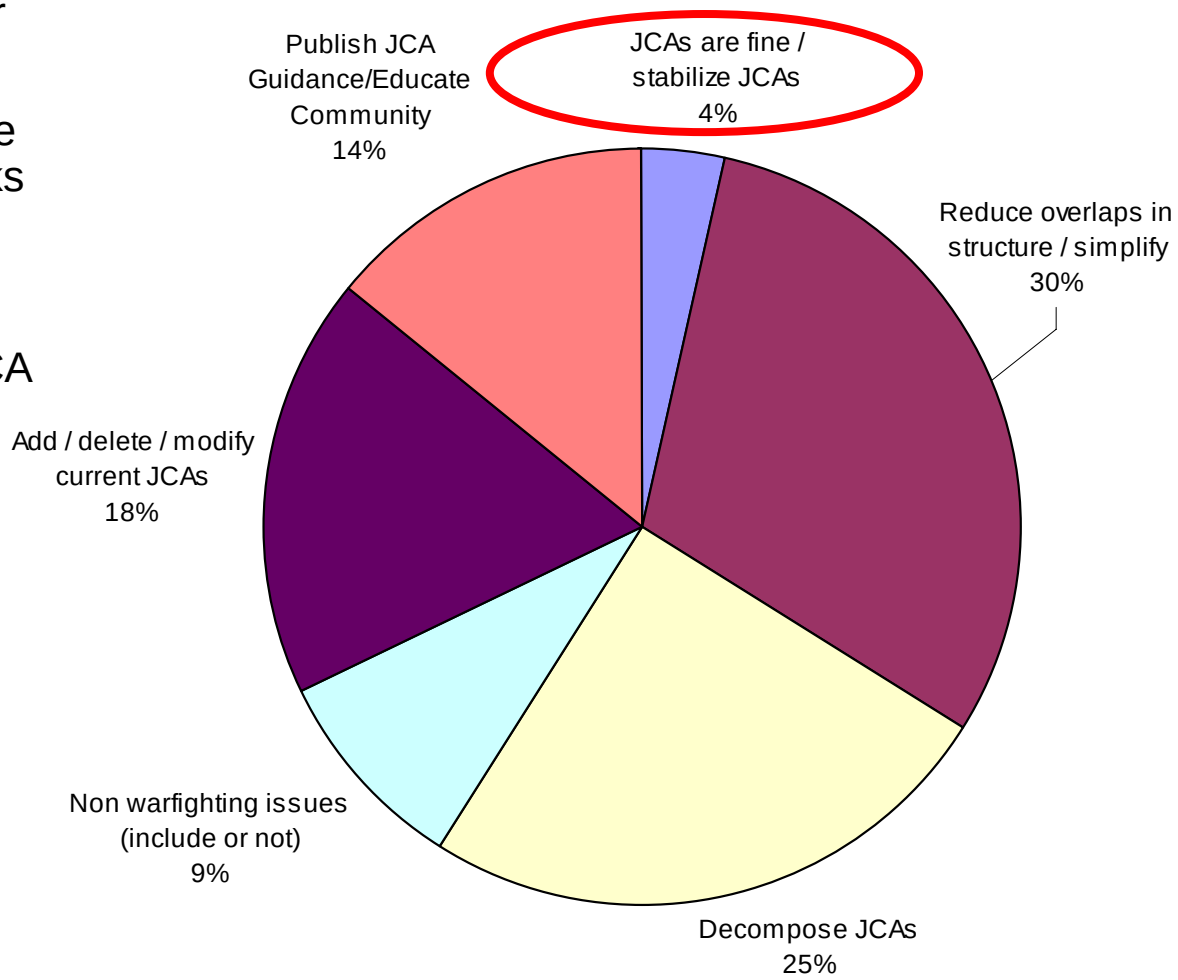
Key areas for improving JCAs

- Overwhelming response for reducing overlap and improving level of detail
  - 61% say reduce overlap
  - 61% say decompose further
- Majority of responses in “Other” amplify first two responses (see next chart)

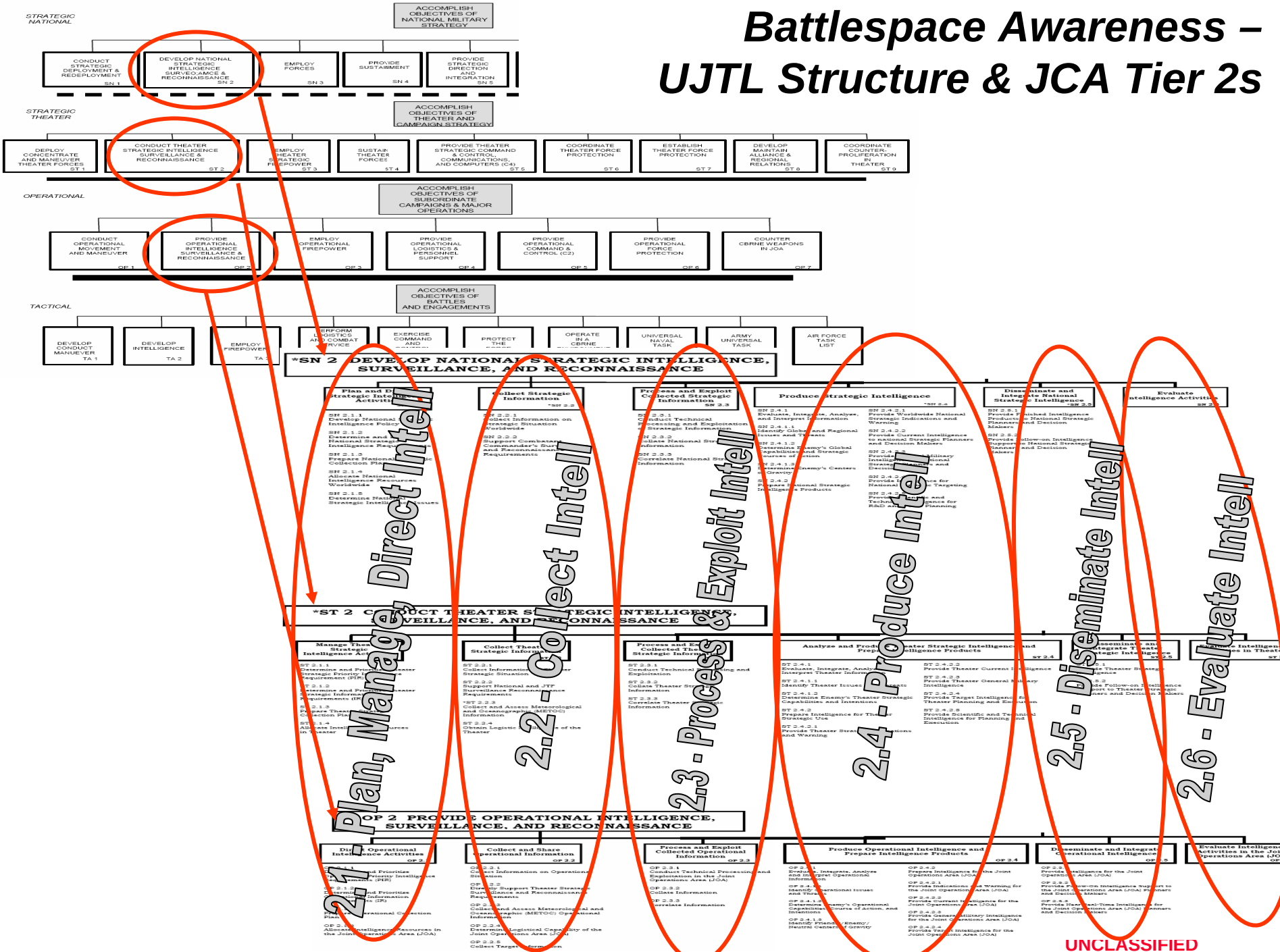


Written comments suggesting improvements to the JCA Framework (Survey Question #3)

- 56 survey respondents had written "*specify / explain*" comments for question 3
- Reduce overlap and decompose comments mirror in check blocks
- Identifies a need for a guidance and educational effort
- Comments regarding adding JCA were "issues of the day" type

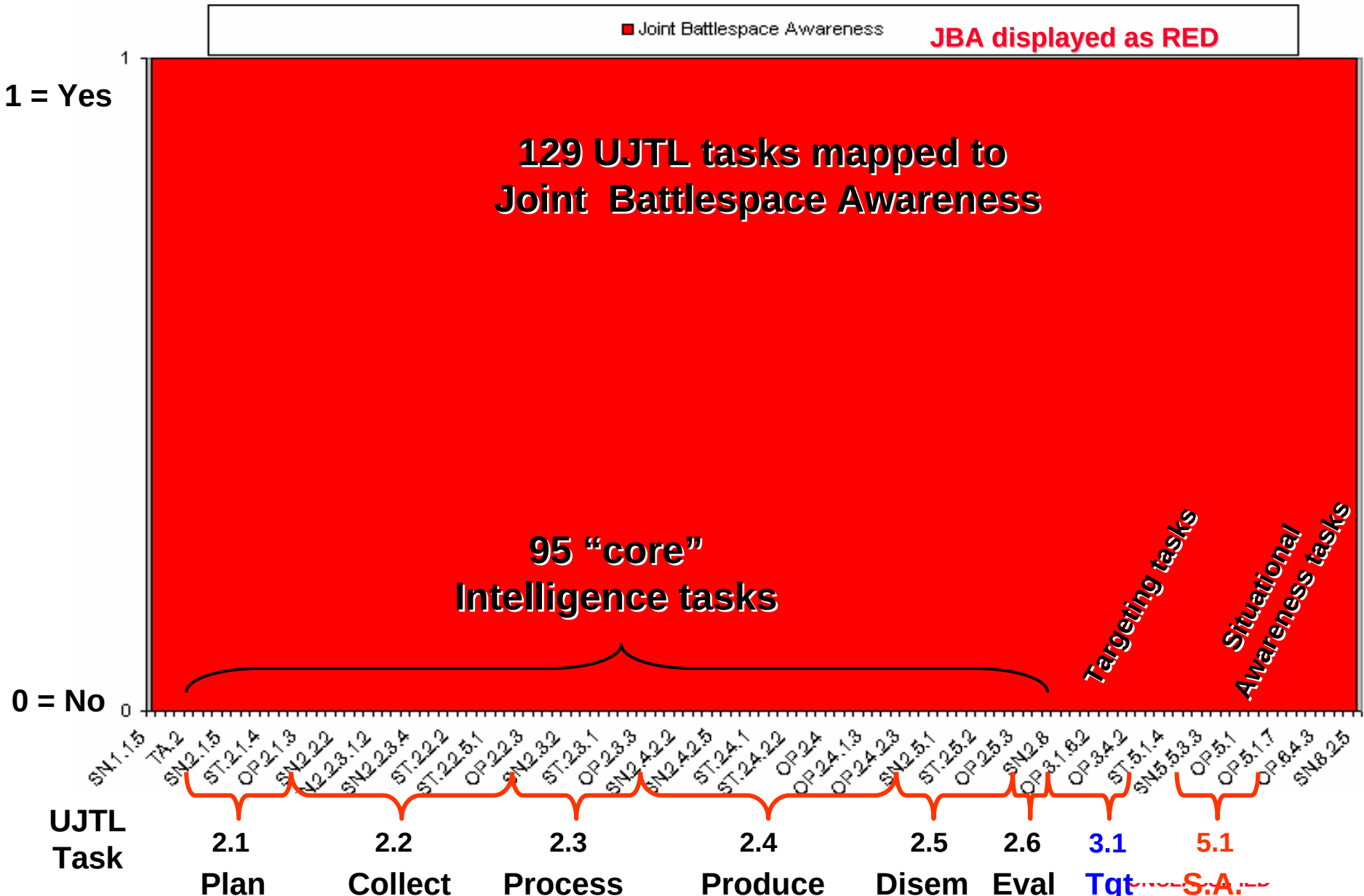


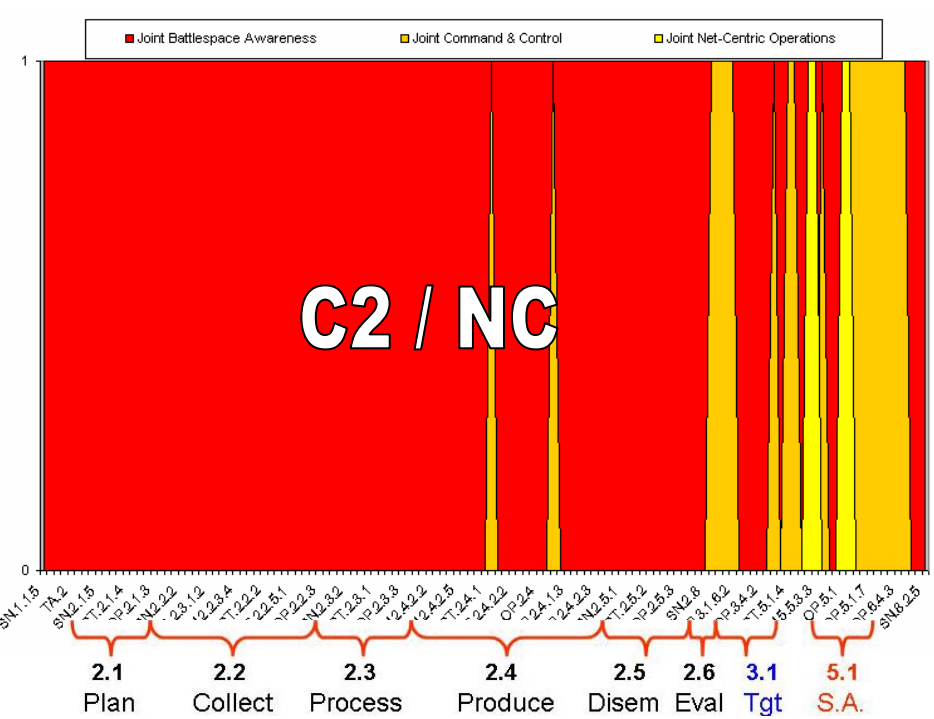
Battlespace Awareness – UJTL Structure & JCA Tier 2s

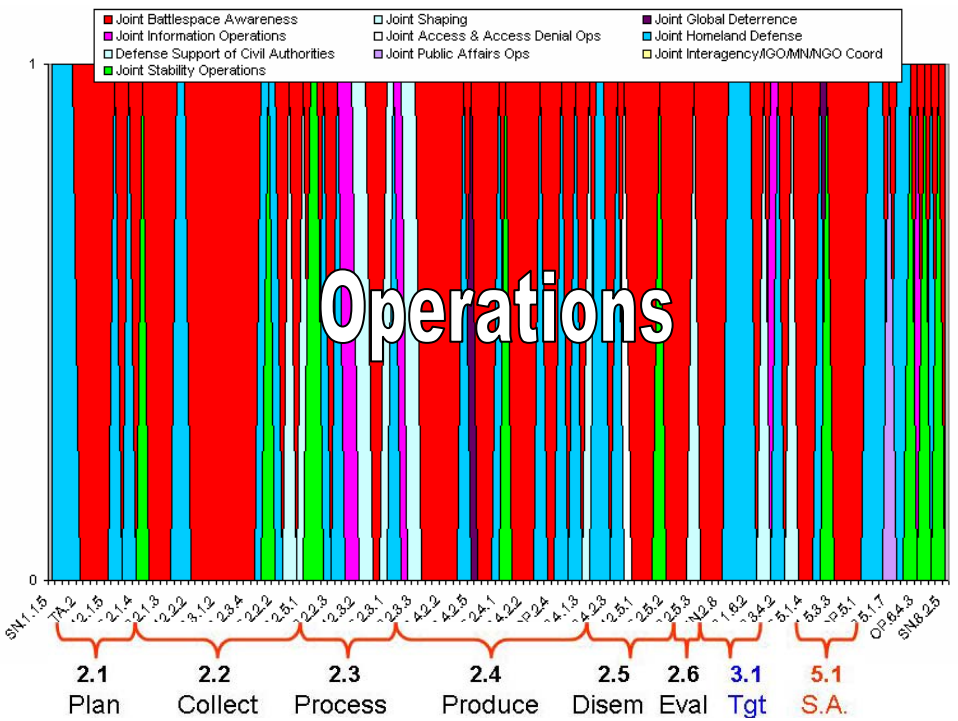


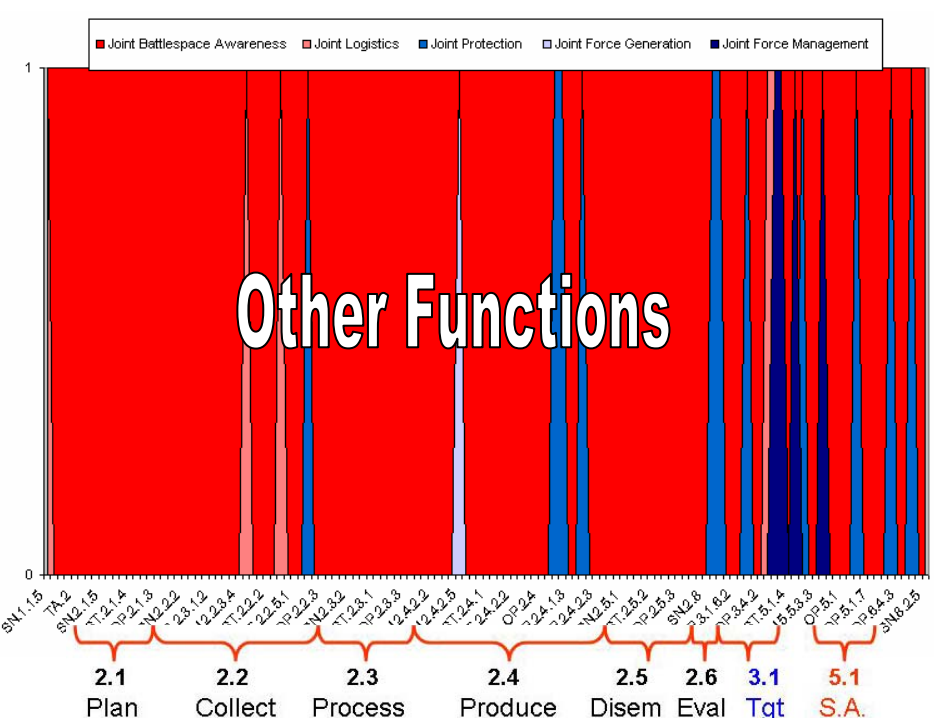
UNCLASSIFIED

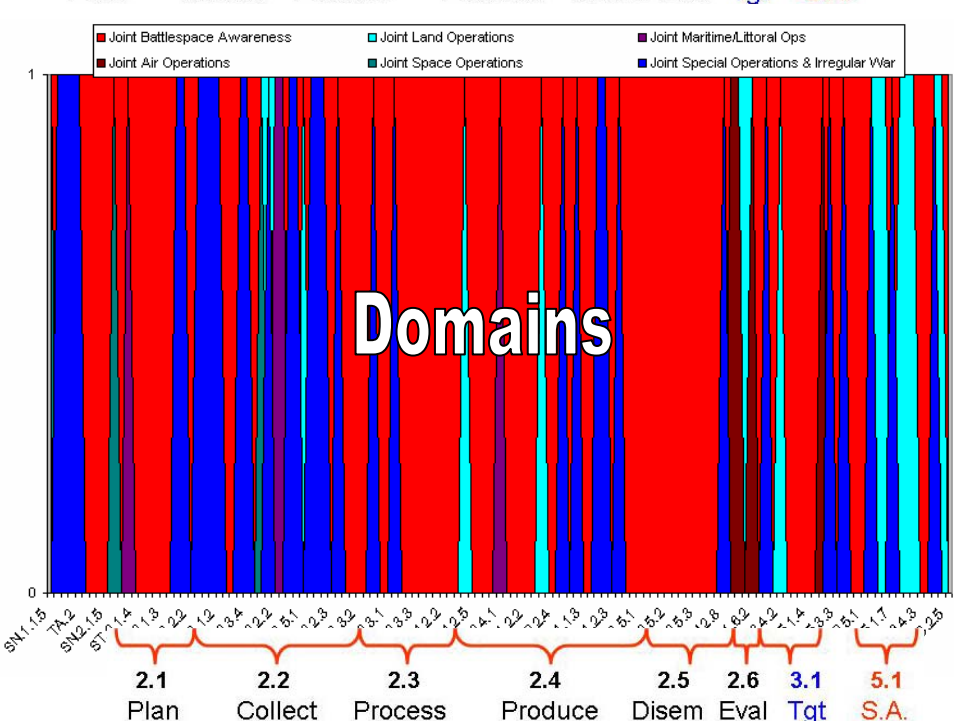
Visualizing the Overlap

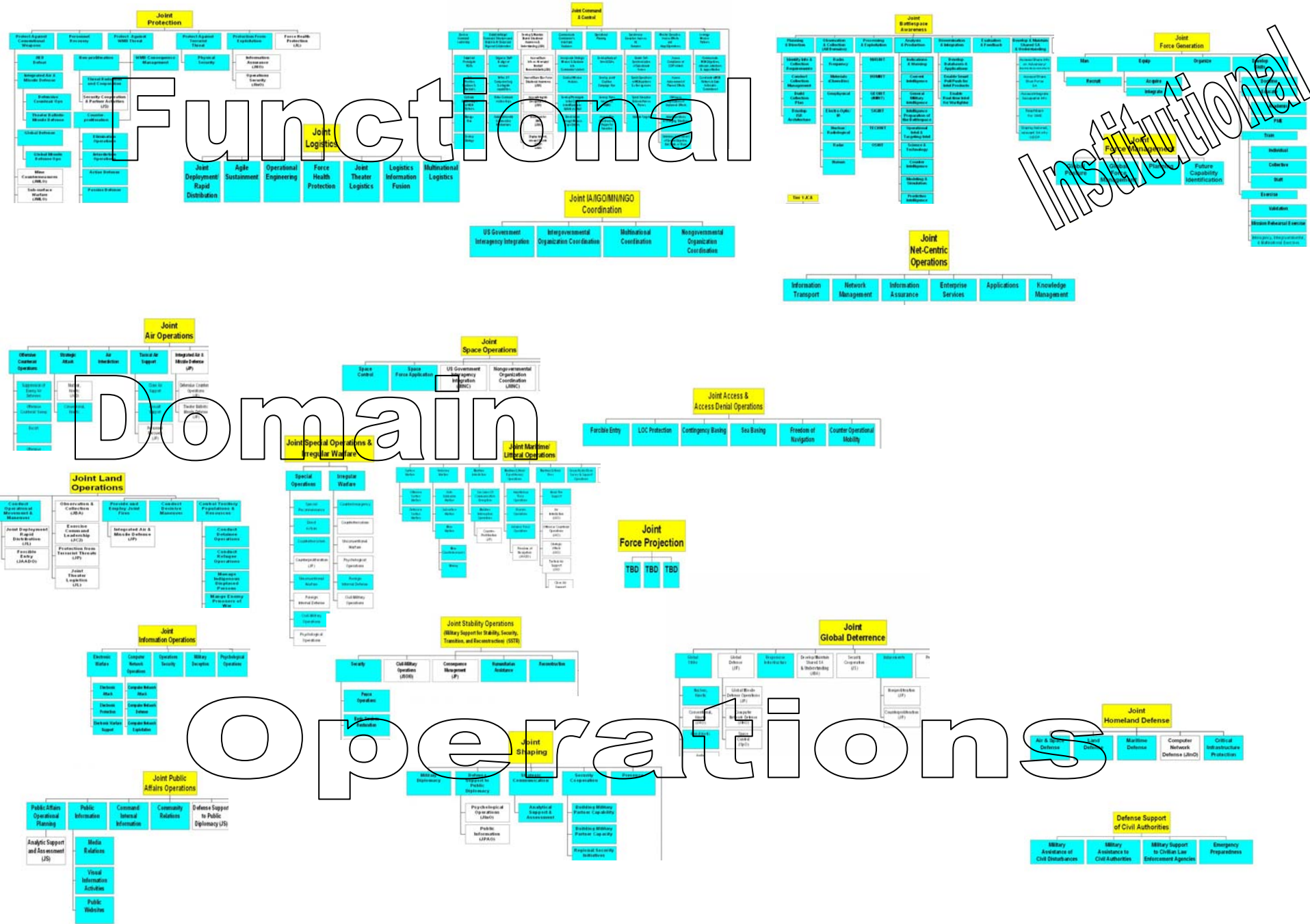



Joint Battlespace Awareness
Joint Command & Control
Joint Net-Centric Operations
C2 / NC
1
0
2.1 Plan
2.2 Collect
2.3 Process
2.4 Produce
2.5 Disem
2.6 Eval
3.1 Tgt
5.1 S.A.


Joint Battlespace Awareness
Joint Shaping
Joint Global Deterrence
Joint Information Operations
Joint Access & Access Denial Ops
Joint Homeland Defense
Defense Support of Civil Authorities
Joint Public Affairs Ops
Joint Interagency/IGO/MN/NGO Coord
Joint Stability Operations
Operations
1
0
2.1 Plan
2.2 Collect
2.3 Process
2.4 Produce
2.5 Disem
2.6 Eval
3.1 Tgt
5.1 S.A.


Joint Battlespace Awareness
Joint Logistics
Joint Protection
Joint Force Generation
Joint Force Management
Other Functions
1
0
2.1 Plan
2.2 Collect
2.3 Process
2.4 Produce
2.5 Disem
2.6 Eval
3.1 Tgt
5.1 S.A.


Joint Battlespace Awareness
Joint Land Operations
Joint Maritime/Littoral Ops
Joint Air Operations
Joint Space Operations
Joint Special Operations & Irregular War
Domains
1
0
2.1 Plan
2.2 Collect
2.3 Process
2.4 Produce
2.5 Disem
2.6 Eval
3.1 Tgt
5.1 S.A.

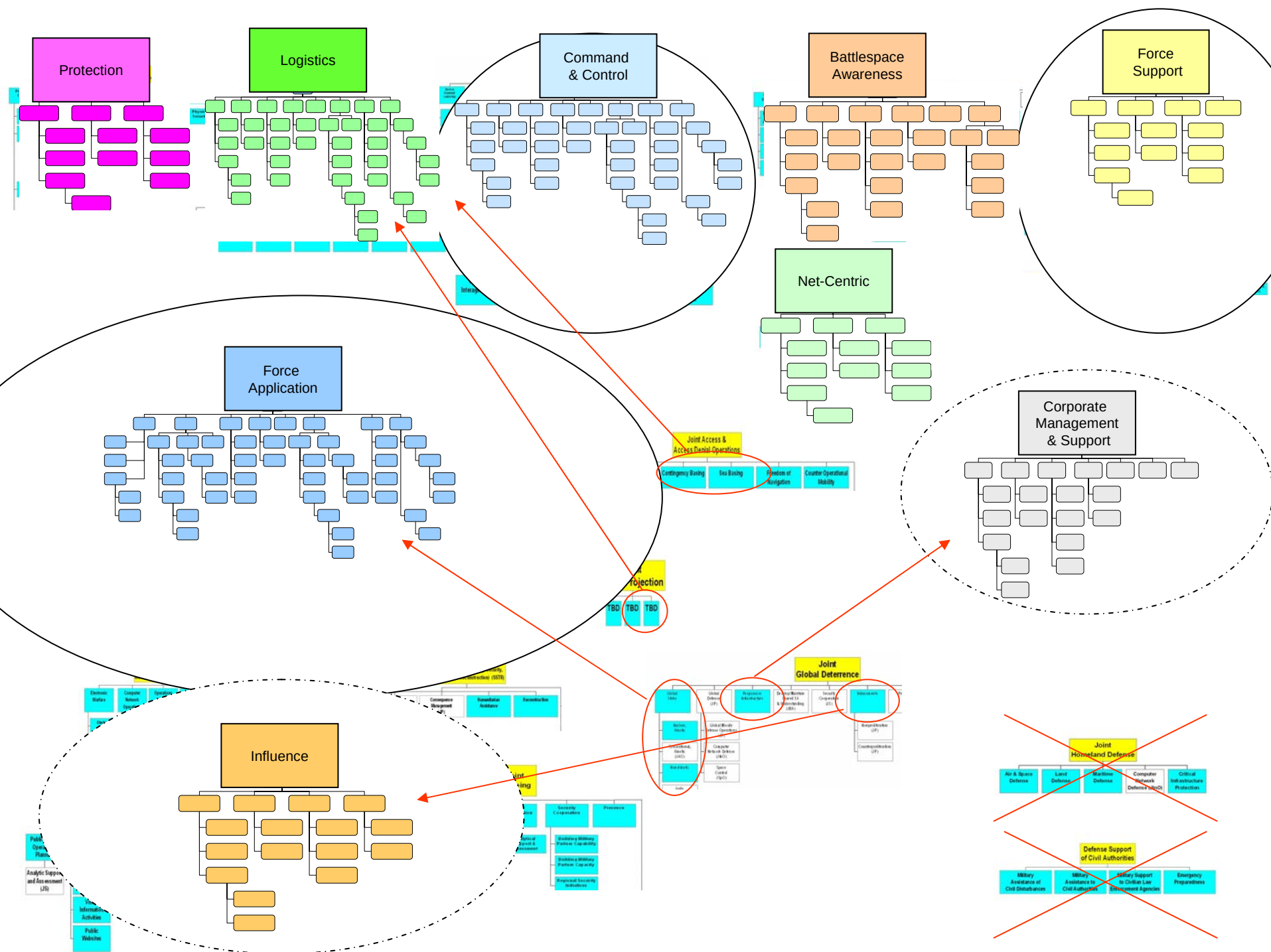


Functional

Domain

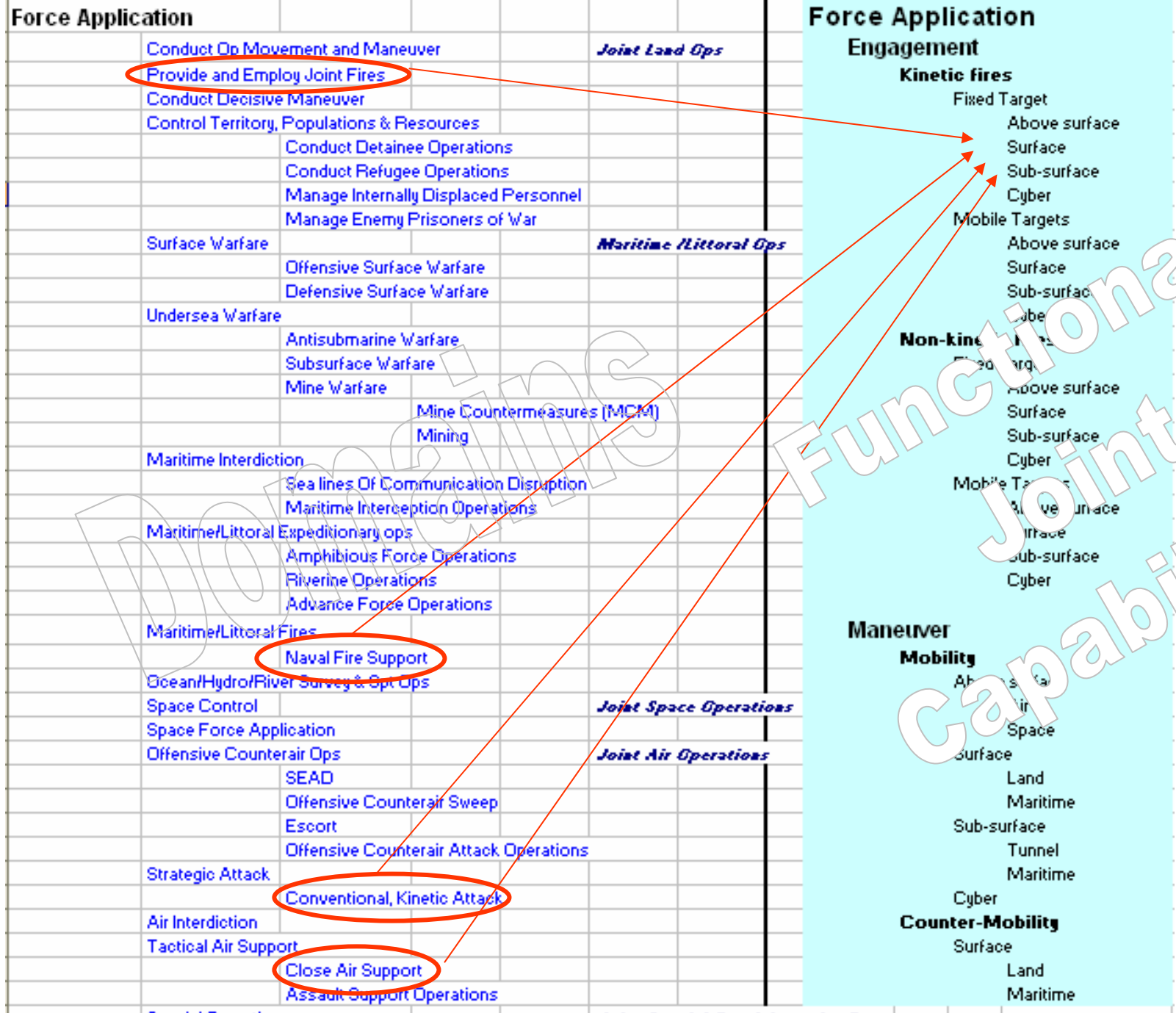
Operations

Institutional


Protection
Logistics
Command & Control
Battlespace Awareness
Force Support
Net-Centric
Force Application
Joint Access & Access Denial Operations
Contingency Basing
Sea Basing
Freedom of Navigation
Counter Operational Mobility
Corporate Management & Support
Projection
TBD
TBD
TBD
Influence
Joint Global Deterrence
Joint Homeland Defense
Air & Space Defense
Land Defense
Maritime Defense
Computer Network Defense (CND)
Critical Infrastructure Protection
Defense Support of Civil Authorities
Military Assistance of Civil Disturbances
Military Assistance to Civil Authorities
Military Support to Civilian Law Enforcement Agencies
Emergency Preparedness

Force Application						
	Conduct Op Movement and Maneuver				*Joint Land Ops*	
	Provide and Employ Joint Fires					
	Conduct Decisive Maneuver					
	Control Territory, Populations & Resources					
		Conduct Detainee Operations				
		Conduct Refugee Operations				
		Manage Internally Displaced Personnel				
		Manage Enemy Prisoners of War				
	Surface Warfare				*Maritime /Littoral Ops*	
		Offensive Surface Warfare				
		Defensive Surface Warfare				
	Undersea Warfare					
		Antisubmarine Warfare				
		Subsurface Warfare				
		Mine Warfare				
			Mine Countermeasures (MCM)			
			Mining			
	Maritime Interdiction					
		Sea lines Of Communication Disruption				
		Maritime Interception Operations				
	Maritime/Littoral Expeditionary ops					
		Amphibious Force Operations				
		Riverine Operations				
		Advance Force Operations				
	Maritime/Littoral Fires					
		Naval Fire Support				
	Ocean/Hydro/River Survey & Spt Ops					
	Space Control				*Joint Space Operations*	
	Space Force Application					
	Offensive Counterair Ops				*Joint Air Operations*	
		SEAD				
		Offensive Counterair Sweep				
		Escort				
		Offensive Counterair Attack Operations				
	Strategic Attack					
		Conventional, Kinetic Attack				
	Air Interdiction					
	Tactical Air Support					
		Close Air Support				
		Assault Support Operations				
	Special Operations				*Joint Special Ops & Irre*	
		Special Recon				

DOTMLPF



Doctrine
Functional
Joint
Capabilities

Experience and Analysis on JCA Use

- **Senior Leaders**
  - Too complex; fewer is better
  - Reduce overlap; endorsed way ahead
- **COCOMs**
  - Eliminate redundancy
  - Align functionally
  - Decompose to support planning & IPL development; need more granularity to express needs
  - Eliminate disconnects between COCOM and JS binning
  - Too many non-warfighting capabilities fall outside JCAs
- **OSD / AT&L**
  - MMT indicates overlaps in over 60% of JCAs
  - Reducing overlaps would increase use/effectiveness
- **OSD / PA&E**
  - Any framework can be used; needs stability
- **JS**
  - Overlaps create ambiguity when binning gaps
  - Meaningful work will occur at Tier III
  - Many capabilities do not fall neatly within current JCAs
- **Services**
  - Eliminate redundancy
  - Decompose to support refined planning & requirements development
- **Planners**
  - Decompose to support planning (Strategy to task)
  - Stabilize the framework

"…Grab bag of capabilities, missions and functions defined by analytic and bureaucratic imperatives."

Activity Overlaps Among Original JCA Tier1

	Count	Defense Support of Civil Authorities	Joint Access & Access Denial Operations	Joint Air Operations	Joint Battlespace Awareness	Joint Command & Control	Joint Force Generation	Joint Force Management	Joint Global Deterrence	Joint Homeland Defense	Joint Information Operations	Joint Interagency / IGO / NGO Coordination	Joint Land Operations	Joint Logistics	Joint Maritime/Littoral Operations	Joint Net-Centric Operations	Joint Protection	Joint Space Operations	Joint Special Operations & Irregular Operations	Joint Stability Operations
	Count	82	217	114	136	138	38	61	173	288	71	18	120	132	140	59	43	14	118	180
Defense Support of Civil Authorities	82																			
Joint Access & Access Denial	217	66 30% 80%																		
Joint Air Operations	114	33 29% 40%	79 69% 36%																	
Joint Battlespace Awareness	136	26 19% 32%	72 53% 33%	59 43% 52%																
Joint Command & Control	138	19 14% 23%	34 25% 16%	42 30% 37%	70 51% 51%															
Joint Force Generation	38	13 34% 16%	25 66% 12%	18 47% 16%	10 26% 7%	13 34% 9%														
Joint Force Management	61	2 3% 2%	3 5% 1%	14 23% 12%	5 8% 4%	57 93% 41%	5 8% 13%													
Joint Global Deterrence	173	55 32% 67%	109 63% 50%	73 42% 64%	103 60% 76%	69 40% 50%	15 9% 39%	22 13% 36%												
Joint Homeland Defense	288	62 22% 76%	173 60% 80%	92 32% 81%	130 45% 96%	106 37% 77%	19 7% 50%	37 13% 61%	169 59% 98%											
Joint Information Operations	71	19 27% 23%	53 75% 24%	47 66% 41%	42 59% 31%	18 25% 13%	3 4% 8%	8 11% 13%	43 61% 25%	67 94% 23%										
Joint Interagency / IGO / NGO	18	4 22% 5%	2 11% 1%	2 11% 2%	9 50% 7%	3 17% 2%	5 28% 13%	0 0% 0%	6 33% 3%	17 94% 6%	0 0% 0%									
Joint Land Operations	120	45 38% 55%	101 84% 47%	59 49% 52%	20 17% 15%	29 24% 21%	21 18% 55%	15 13% 25%	43 36% 25%	87 73% 30%	26 22% 37%	2 2% 11%								
Joint Logistics	132	35 27% 43%	77 58% 35%	29 22% 25%	44 33% 32%	69 52% 50%	26 20% 68%	36 27% 59%	65 49% 38%	72 55% 25%	1 1% 1%	3 2% 17%	44 33% 37%							
Joint Maritime/Littoral	140	45 32% 55%	117 84% 54%	66 47% 58%	28 20% 21%	30 21% 22%	21 15% 55%	15 11% 25%	59 42% 34%	108 77% 38%	28 20% 39%	3 2% 17%	96 69% 80%	46 33% 35%						
Joint Net-Centric Operations	59	5 8% 6%	17 29% 8%	8 14% 7%	25 42% 18%	16 27% 12%	8 14% 21%	0 0% 0%	21 36% 12%	58 98% 20%	9 15% 13%	13 22% 72%	10 17% 8%	8 14% 6%	11 19% 8%					
Joint Protection	43	1 2% 1%	36 84% 17%	4 9% 4%	8 19% 6%	4 9% 3%	1 2% 3%	0 0% 0%	5 12% 3%	42 98% 15%	17 40% 24%	1 2% 6%	27 63% 23%	1 2% 1%	24 56% 17%	21 49% 36%				
Joint Space Operations	14	4 29% 5%	8 57% 4%	4 29% 4%	7 50% 5%	3 21% 2%	0 0% 0%	0 0% 0%	6 43% 3%	10 71% 3%	4 29% 6%	0 0% 0%	3 21% 3%	2 14% 2%	2 14% 1%	0 0% 0%	0 0% 0%			
Joint Special Operations &	118	35 30% 43%	94 80% 43%	72 61% 63%	43 36% 32%	24 20% 17%	14 12% 37%	11 9% 18%	57 48% 33%	90 76% 31%	40 34% 56%	3 3% 17%	69 58% 58%	28 24% 21%	82 69% 59%	8 7% 14%	19 16% 44%	2 2% 14%		
Joint Stability Operations	180	58 32% 71%	159 88% 73%	57 32% 50%	69 38% 51%	39 22% 28%	21 12% 55%	10 6% 16%	93 52% 54%	139 77% 48%	40 22% 56%	0 0% 0%	81 45% 68%	72 40% 55%	93 52% 66%	9 5% 15%	30 17% 70%	3 2% 21%	85 47% 72%	

50% or more JIAS in common in those two JCAs

Greater then 70% JIAS in common in those two JCAs

Greater then 80% JIAS in common in those two JCAs

- Every JCA shows overlap with one or more other JCAs
  - 50% or more shared activities
- Over a third of the time, two JCAs share 50% or more activities

AT&L JCA Assessment

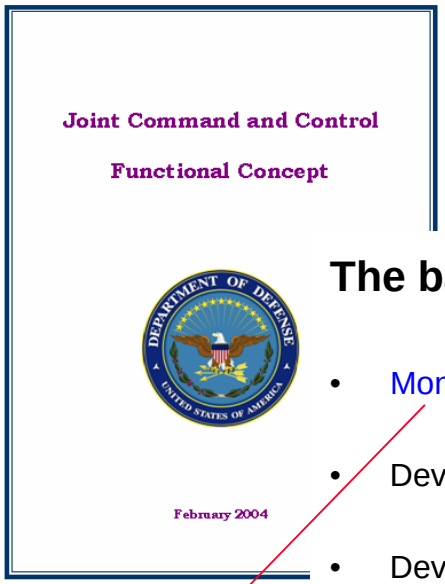
- Using MMT cross-referencing function, we compared capabilities called out for each Tier 1 JCA
  - Percentage of shared activities reflects relationships among different capability areas

1. **JCAs are mapped to operational activities**
2. **Activities mapped to the Tier 2 JCAs are rolled up under Tier 1**
3. **This mapping can be used to cross reference activities mapped across the 21 JCA Tier 1**
4. **Count of activities that map to each JCA**
5. **Count of activities that map to both JCAs**
6. **Percentage of activities mapped to Joint Air Operations JCA which are also mapped to Joint Access Denial JCA**
7. **A higher percentage of shared activities indicates a stronger relationship between the JCAs**

	Count	Defense Support of Civil Authorities		Joint Access & Access Denial Operations		Joint Air
		82		217		114
Defense Support of Civil Authorities	82					
Joint Access & Access Denial	217	66 80%	30%			
Joint Air Operations	114	33 40%	29%	79 36%	69%	
Joint Battlespace Awareness	136	26 32%	19%	72 33%	53%	59 52%
Joint Command & Control	138	19 23%	14%	34 16%	25%	42 37%
Joint Force Generation	38	13 16%	34%	25 12%	66%	18 16%
Joint Force Management	61	2 2%	3%	3 1%	5%	14 12%
Joint Global Deterrence	173	55 67%	32%	109 50%	63%	73 64%

C2 JFC

C2 Tier 2s



The basic C2 *functions* are listed below:

- Monitor and collect data on the ***situation***.
- Develop an ***understanding*** of the situation.
- Develop a ***course(s) of action*** and select one
- Develop a ***plan*** to execute the selected course of action.
- Execute the plan, to include providing ***direction*** and leadership to subordinates.
- ***Monitor*** execution of the plan and adapt as necessary.

C2 JFC, Feb 04

Battlespace Awareness
Blue SA

Command & Control

Tier 2	Tier 3
Organize	
	Cultivate external relations
	Structure organization to mission
	Foster collaborative environment
Understand	
	Implement shared situational awareness
	Develop knowledge
	Share knowledge
*** Operational Planning**	
	Analyze problem
	Apply situational understanding
	Develop strategy
	Develop courses of action
	Analyze course of action
Decide	
	Manage risk
	Select actions
	Establish rule sets
	Establish intent and guidance
	Intuit
Direct	
	Communicate intent and guidance
	Task
	Establish metrics
Monitor	
	Assess compliance with guidance
	Assess effects
	Assess achievement of objectives
	Assess guidance

Headquarters U.S. Air Force

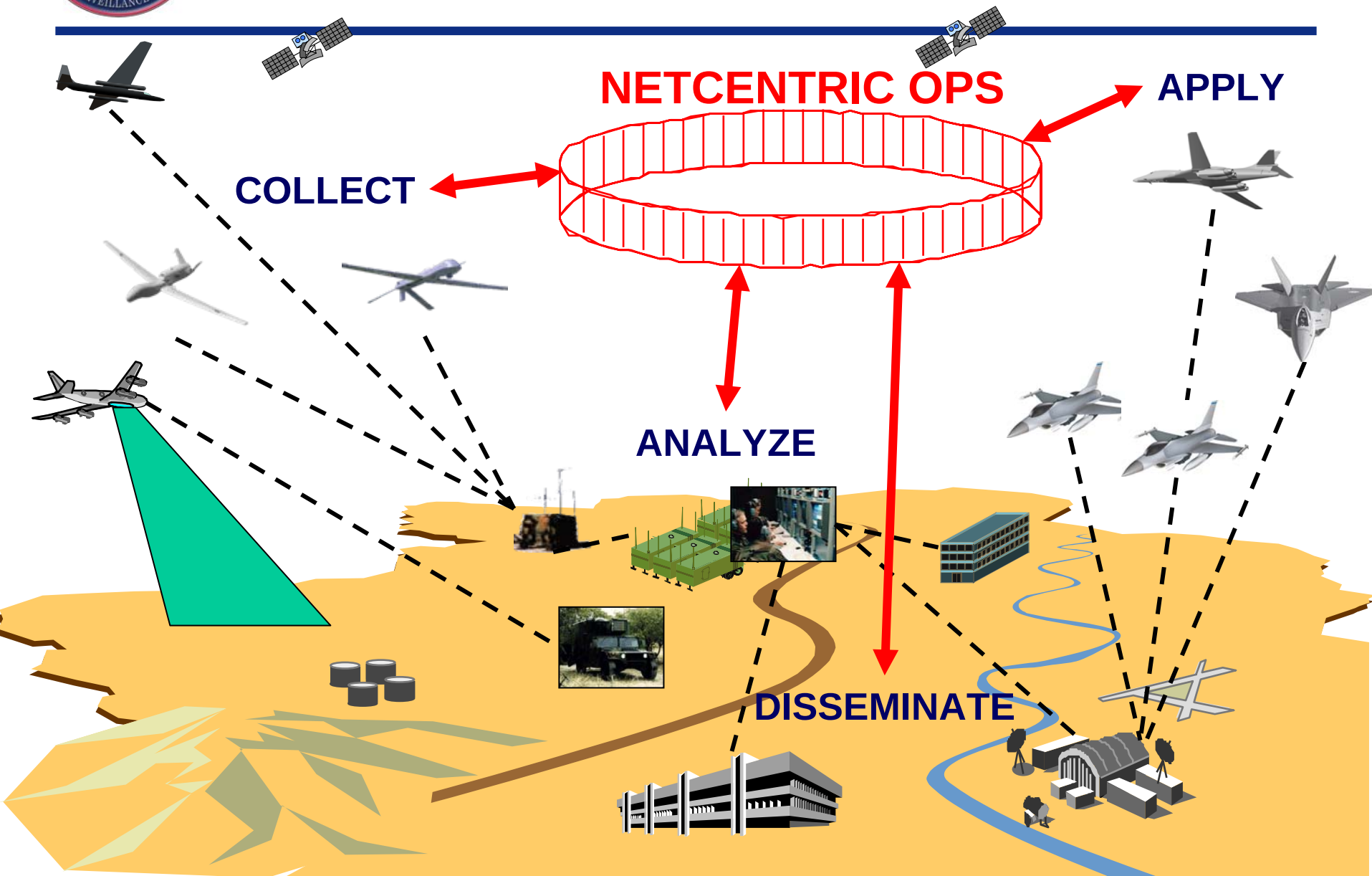
Fly – Fight – Win

Precision Strike Association Winter Roundtable

Application of ISR Capabilities to Tighten the Kill Chain: USAF Perspective

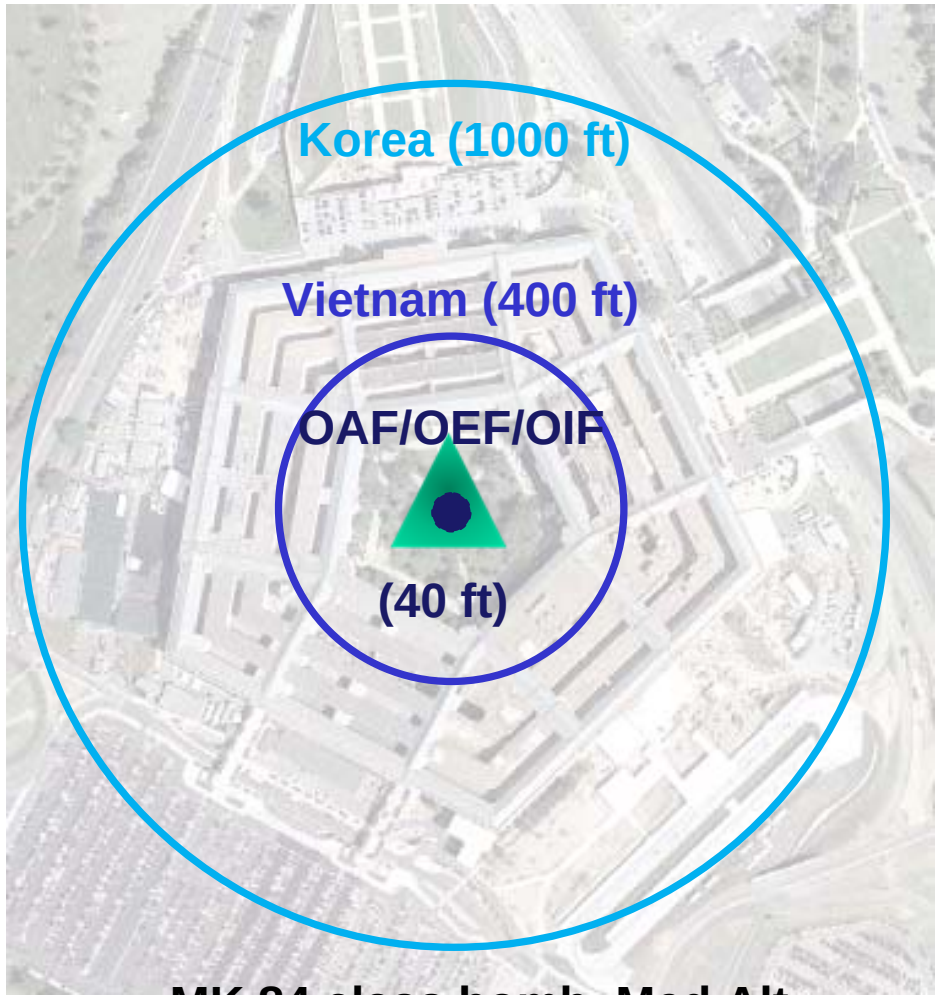
Colonel Dash Jamieson
Director of ISR Transformation, HQ USAF

ISR Effects



Changing Focus

- ISR has always been about the kill chain
  - Artillery spotting
  - Roots of airpower
- 20th century – Hitting Targets
  - Anywhere, anytime
- 21st century – Determine and Assess Effects
  - Kinetic or non-kinetic



MK 84 class bomb, Med Alt

The Prominence of ISR Operations

- Not just the enemy or type of war
  - Non-state actors, Irregular warfare
- Expectations
- Desert Storm: 99% of sorties had assigned targets
- OIF: 99% of sorties take off w/unknown target
- Requires flexibility
  - Extremely netted operations
  - Global effects
  - Minimal footprint, risk
  - Projects power, not vulnerability

Optimizing the Kill Chain

"Interoperability is all about what capabilities I have that can make your operations better. Interdependence is all about what you need done that you can't live without, (and) my capability is the only capability you have."

General Ronald E. Keys

Predator Video

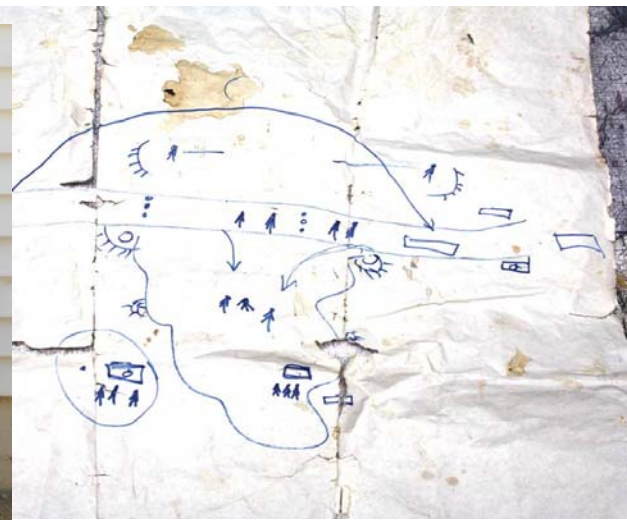
FRIENDLIES

SNIPER

The Wave of the Present

How Do We Improve Today?

- UAS role surpassing expectations
  - Capability, versatility
  - Value for cost
  - Reliability, maintainability
  - Significantly reduce risk
- Deputy SecDef Memo 13 Sep 07



F2T2EA…and E Again

ISR Inventory Evolving

- Paradigm shift in terms of iron
- Legacy ISR Aircraft: LD/HD won't be fixed through procurement
- Mission Migration From Manned To Unmanned
  - Deliver wide range of kinetic and non-kinetic effects
  - Increased ranges, loiter times, payloads with decreased risk and footprint

- Sensor-Shooter line blurring
  - UAS adding attack capability
  - Next gen aircraft incorporate ISR capability

F2T2EA to F3

Predator: 600+ hours looking for and tracking al-Zarqawi

+

2 F-16Cs: 10 minutes of force application

=

Fly – Fight – Win

Self-Imposed Hurdles
Overcoming Semantics

- Strategic – Operational – Tactical
  - Effects not platforms
- Sensor – Shooter
  - Nomenclature constricts potential
  - Misperceptions
    - F/A and *non-traditional ISR*
    - *RQ* can't shoot
- ISR: Support or Operations?
  - ISR *Is* Ops…the *Hunter* in Hunter-Killer

ISR Capabilities

- Result in a value-added effect
- Intelligence cycle as a lens
  - Traditional view
  - Transformational view
- Assessment

Cross-domain integrated ISR optimizes effects chain

BAE SYSTEMS

Missiles & Weapons Market in Perspective

Jeff Ryder
BAE Systems, Inc.
January 23, 2008

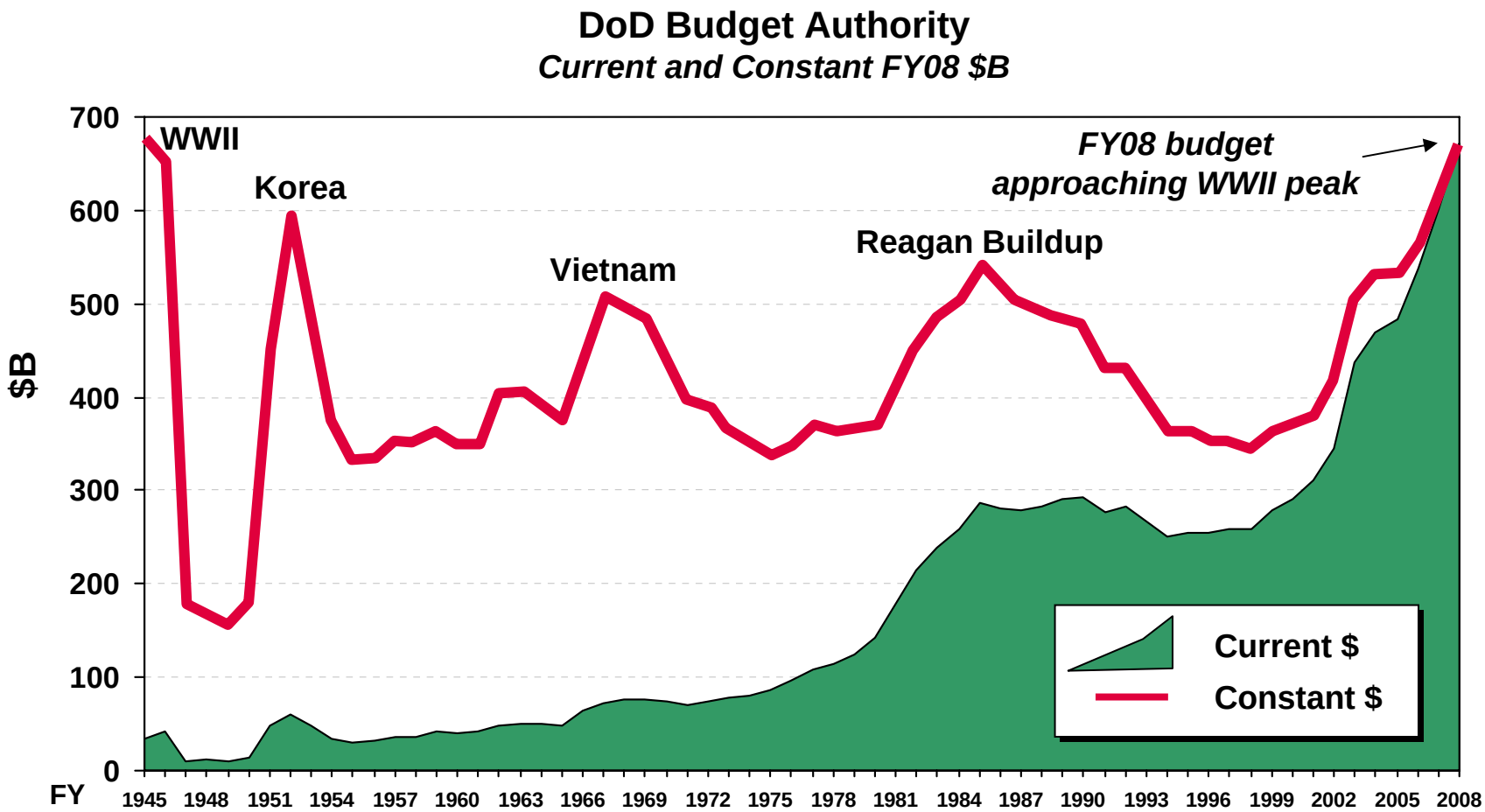
Introduction

1. US defense budget outlook
   - Scenarios
   - Drivers
2. Missiles & Weapons budget outlook
   - Missiles, PGW, munitions and ordnance
   - Market forecast
3. Trends to reorient capabilities
   - Capability gaps
   - Future scenarios

Approach

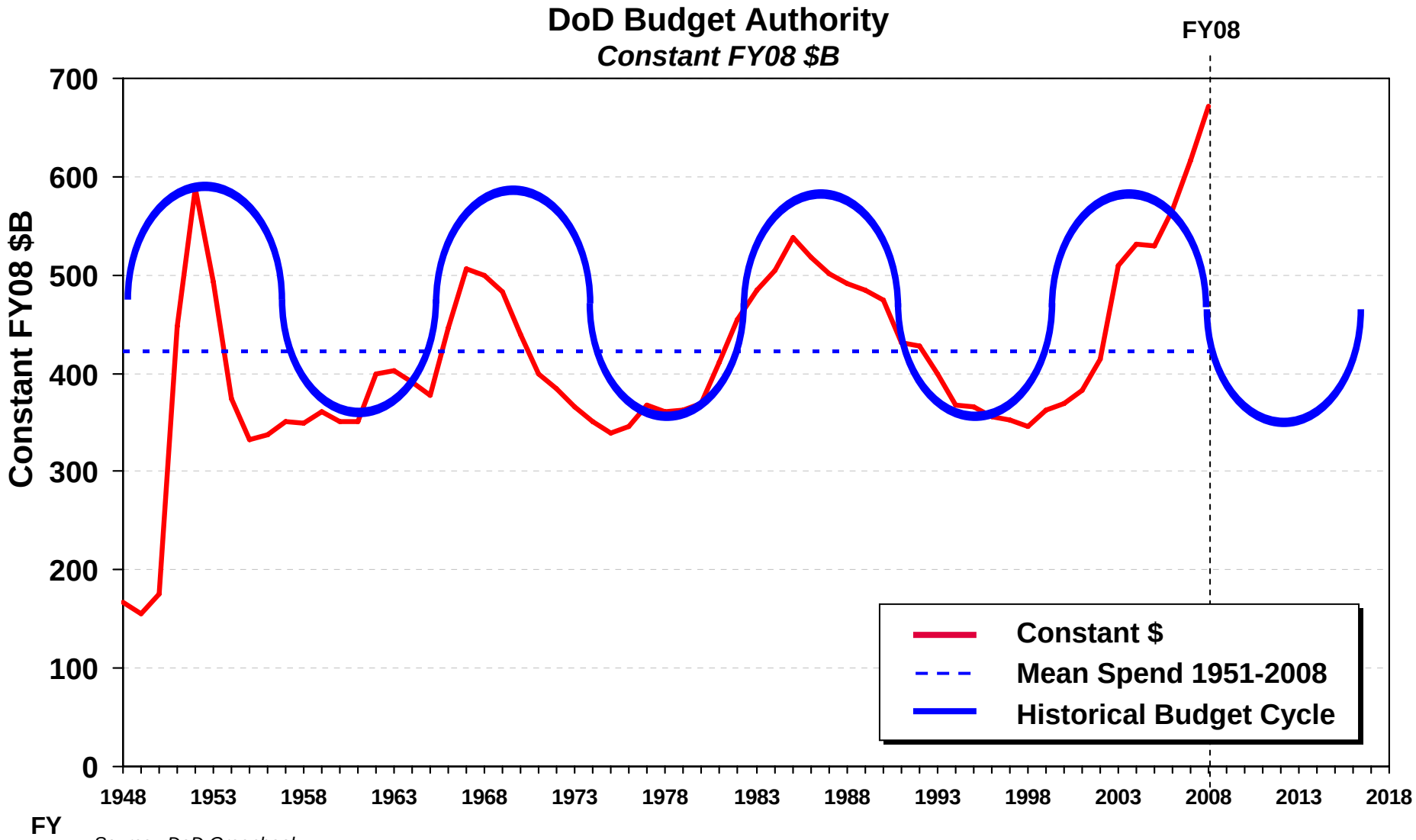
- GEIA: interview based, cross-industry analysis
- Defense budget analysis

The defense budget is approaching record-breaking levels



Source: DoD Greenbook

The budget is currently "off cycle" – a return to historical cyclicality would suggest a decline is imminent



Source: DoD Greenbook

A number of factors shape the budget outlook – threat perception, politics and economics matter most

Primary budget-shaping factors:

- Threat
- Politics
- Economics

Factors that pressure the budget:

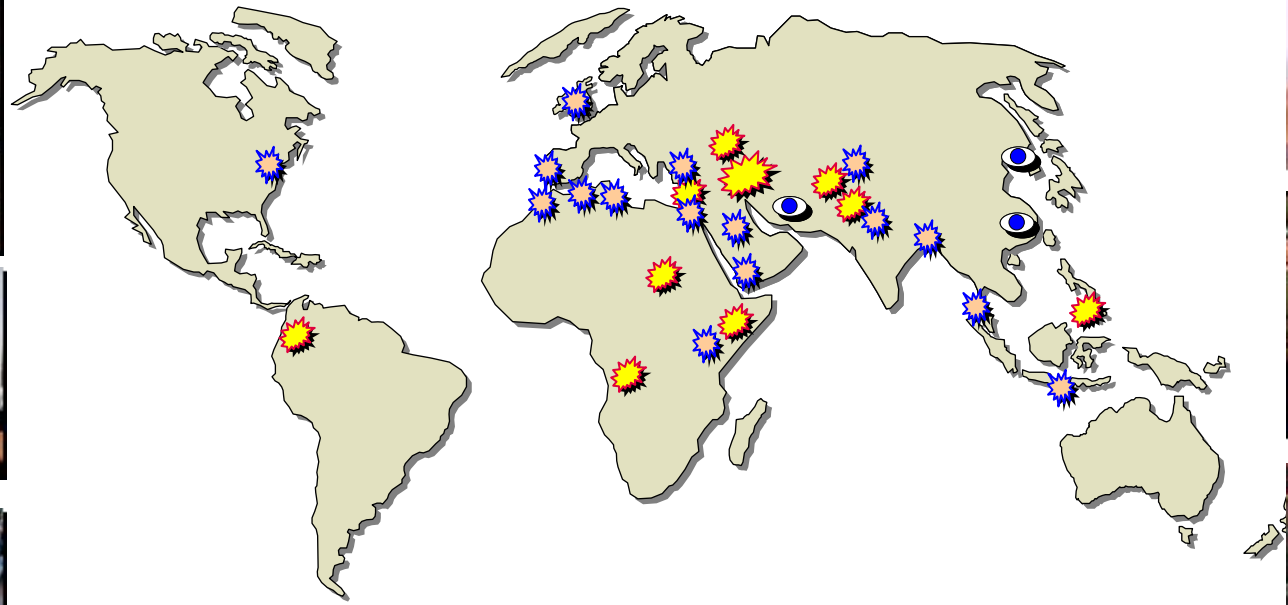
- Withdrawal from Iraq
- Increase in mandatory spending
- Popular disapproval of defense spending

Factors that buoy the budget:

- High Optempo
- Rising Operations & Support (O&S) costs
- Reset requirements
- Investment requirements

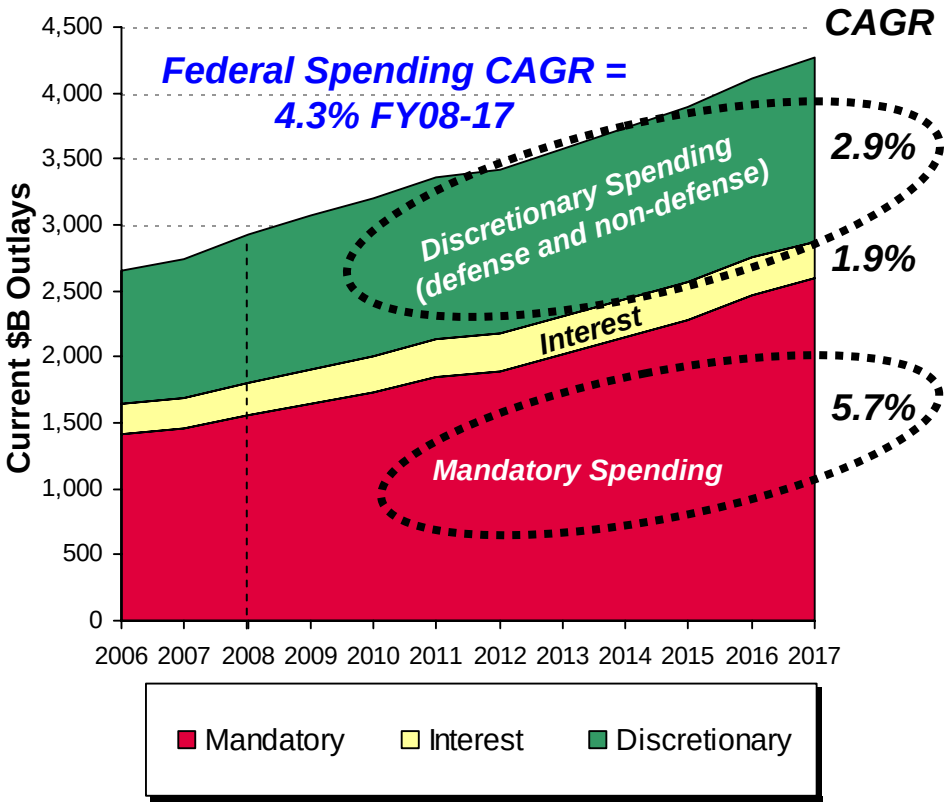
The security environment has become increasingly complex

Global Security Environment

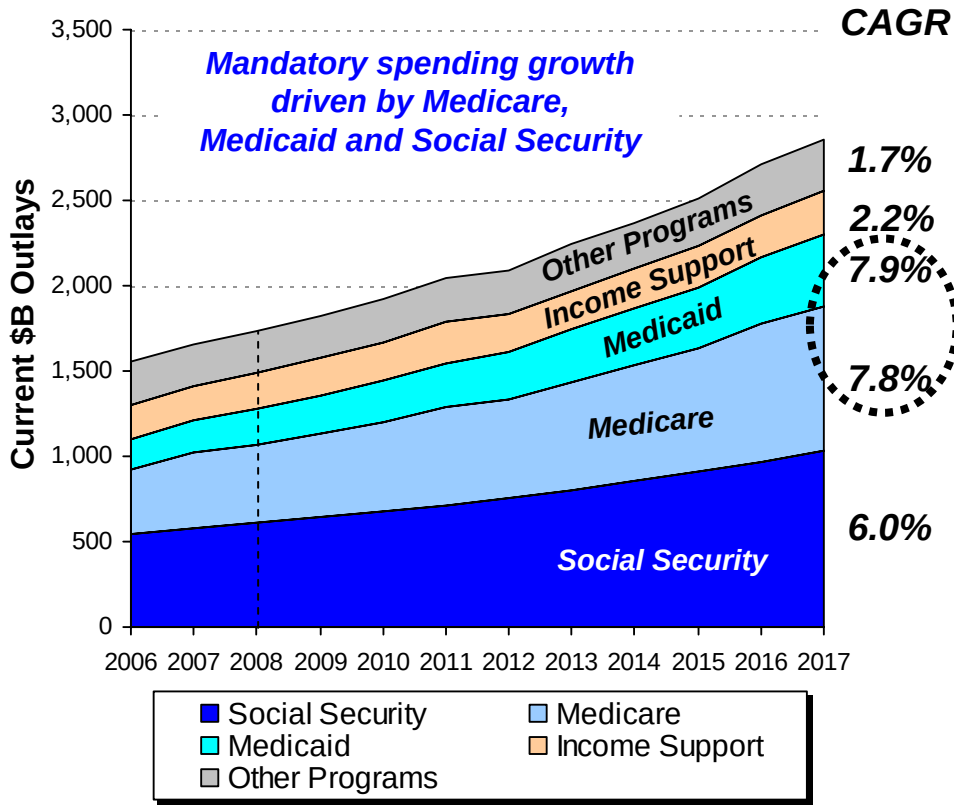


A key economic/fiscal factor in the defense forecast is the rapid growth in mandatory spending accounts

Federal Spending
by Major Category 2006-2017

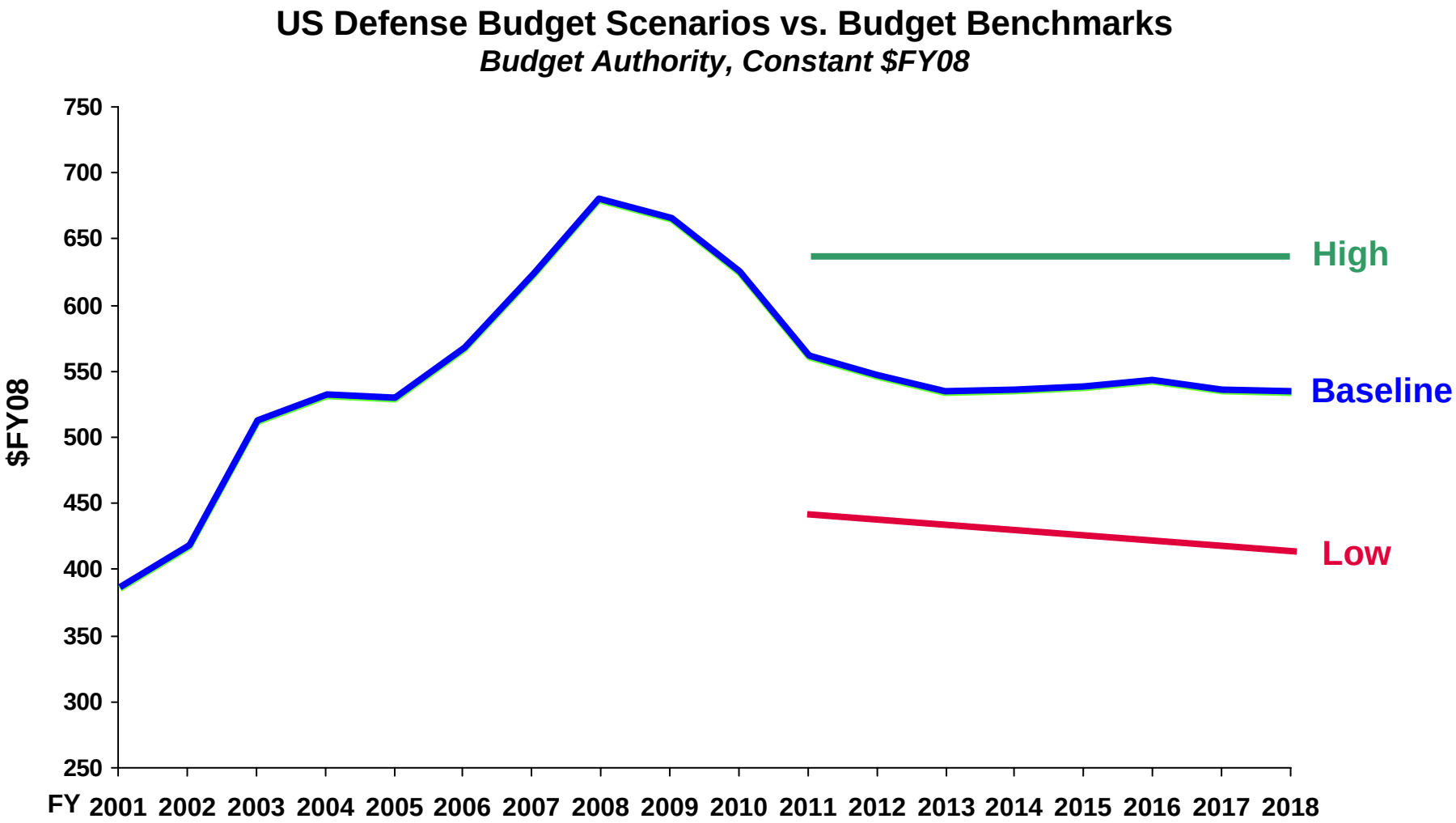


Mandatory Spending
By Account 2006-2017



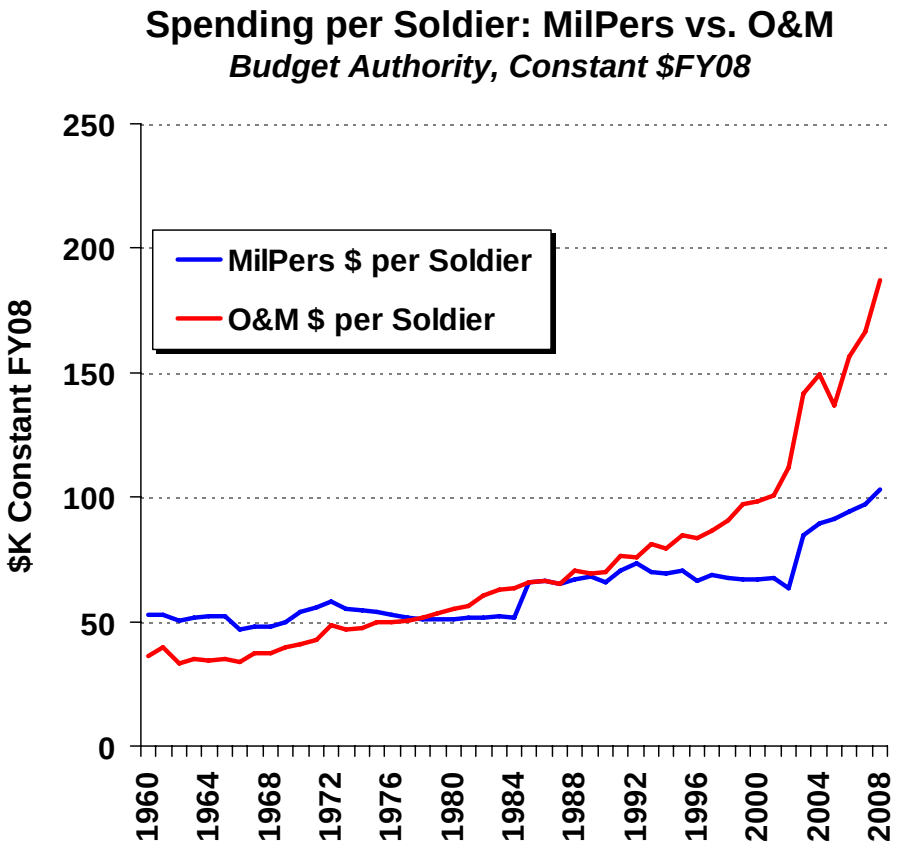
Source: CBO projections, August 2007

Future spending will likely remain high by historical comparison



Source: DoD Greenbook FY08, GEIA, BAE Systems, Inc.

Upwards budget pressure is driven by the inexorable rise in Operations & Support costs

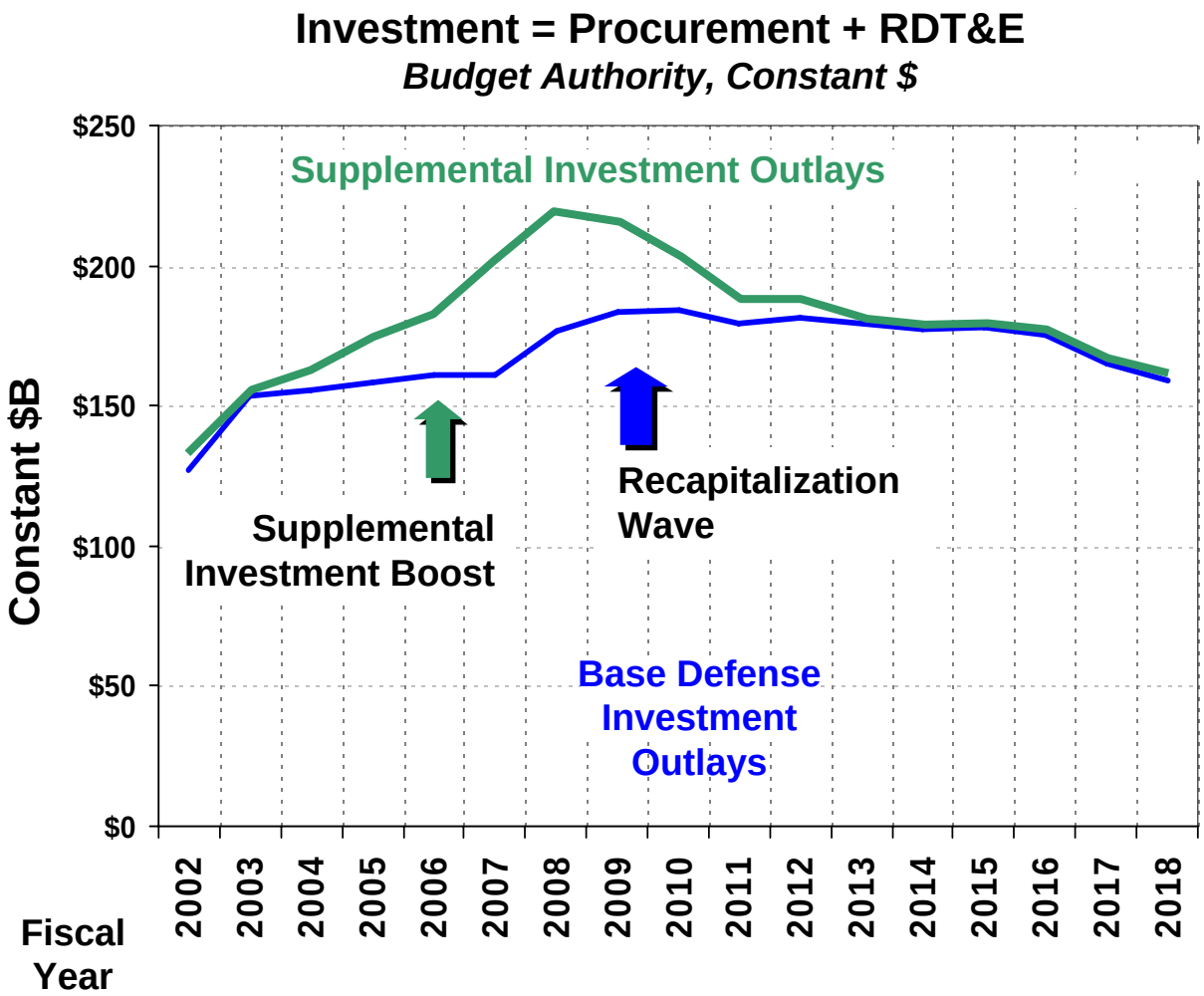


- O&M drivers
  - High Optempo
  - Aging fleets
  - Increasing complexity of weapons
  - Rising fuel costs
  - Increasing use of industry contractors
- MilPers drivers
  - Force augmentation (+92,000)
  - Healthcare (costs doubled 2000-2005)
  - Rate of military retiree and dependents increased 6.0% per year 2001-2005
  - Upwards pressure on compensation due to private-sector benchmarking

- **Risk that O&S costs will erode investment accounts**
- **The only historical means to curb O&S growth has been to reduce end strength**

Source: DOD Greenbook

Investment spending will decline in real dollars



- Current investment funding forecast insufficient to fully fund current portfolio
- Cost increases, (historically 15%) could add a $25B burden
- May see additional Service requests
- O&S budget intrusion
- Portfolio trades will continue, placing premium on program performance

Source: DoD Greenbook FY08, GEIA

The Services indicate investment prioritization on platforms

Service Investment Priorities

Service	Investment Priorities
Air Force	• F-22 • KC-X • C-17/C-5 • CSAR-X • JSF • LRS • SBIRS • TSAT • Space Radar
Navy	• Shipbuilding (CVN-78, DDG-1000, LPD-17, LHA(R), Virginia) • Aircraft modernization (JSF, F/A-18 E/F, EA-18G, BAMS, MMA/P-8A)

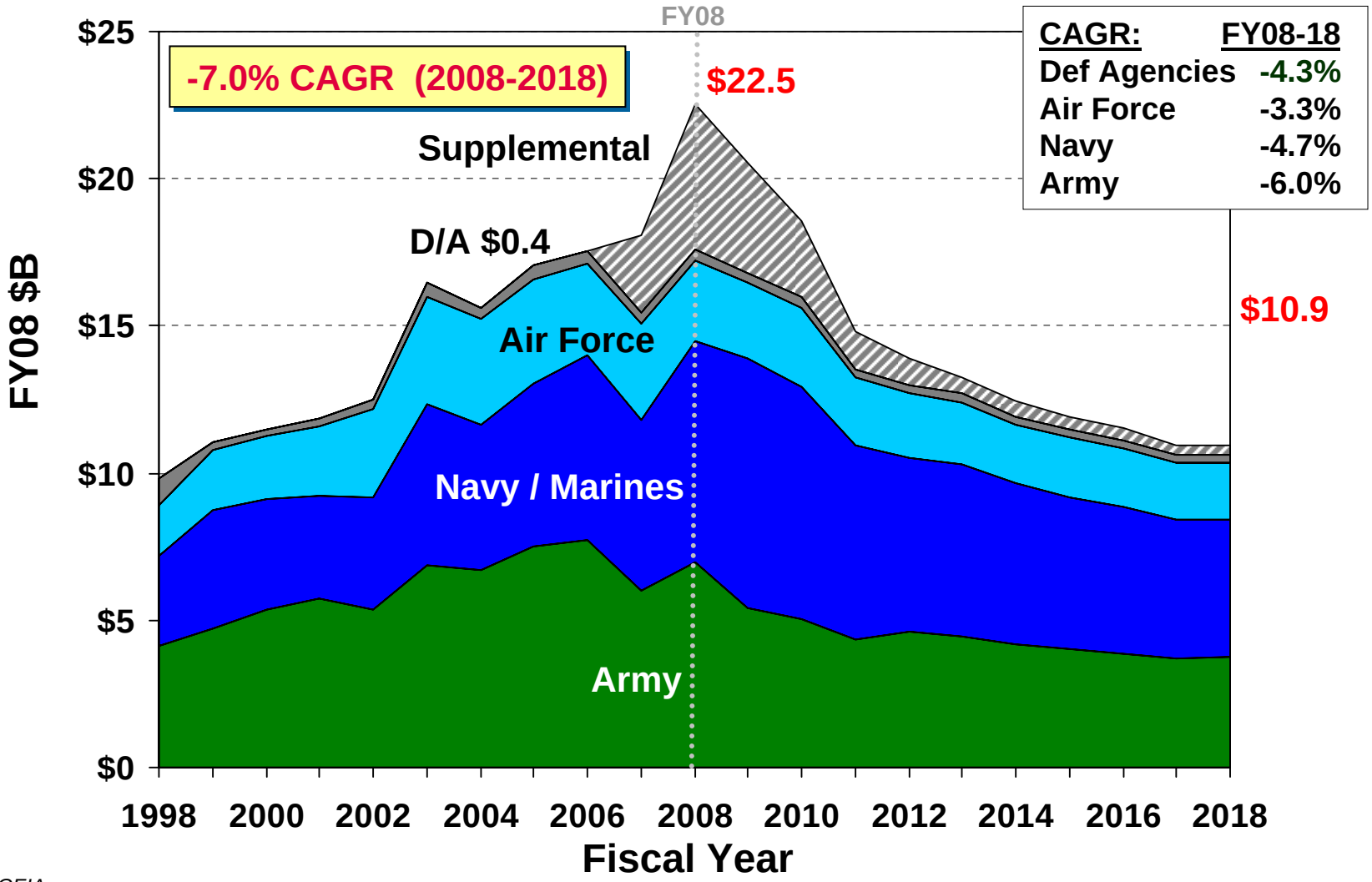
Service	Investment Priorities
Army	• FCS • FMTV/JLTV • Helicopter modernization • MRAP • Force augmentation
Marine Corps	• JSF • Expeditionary Fighting Vehicle (EFV) • Light Armored Vehicle (LAV) • Amphibious shipbuilding • V-22 • CH-53K • Force augmentation

Missiles & Weapons budgets will decline over the next decade, with emphasis on upgrades as opposed to new starts

- Missiles & weapons budget will decline over the forecast period
  - Pressure on topline and between Services
  - Supplemental war funding expected to drop off in near term
  - Several major programs have/will be winding down
  - Concern weapons will become bill payer for platforms
- Spending profile shows few new program starts
  - Emphasis on improving and upgrading legacy systems
  - Iraq/GWOT driving primary requirements and capability gaps
  - Replenishment for expended ordnance and fatigue
  - Force Augmentation (Army, USMC) in near term

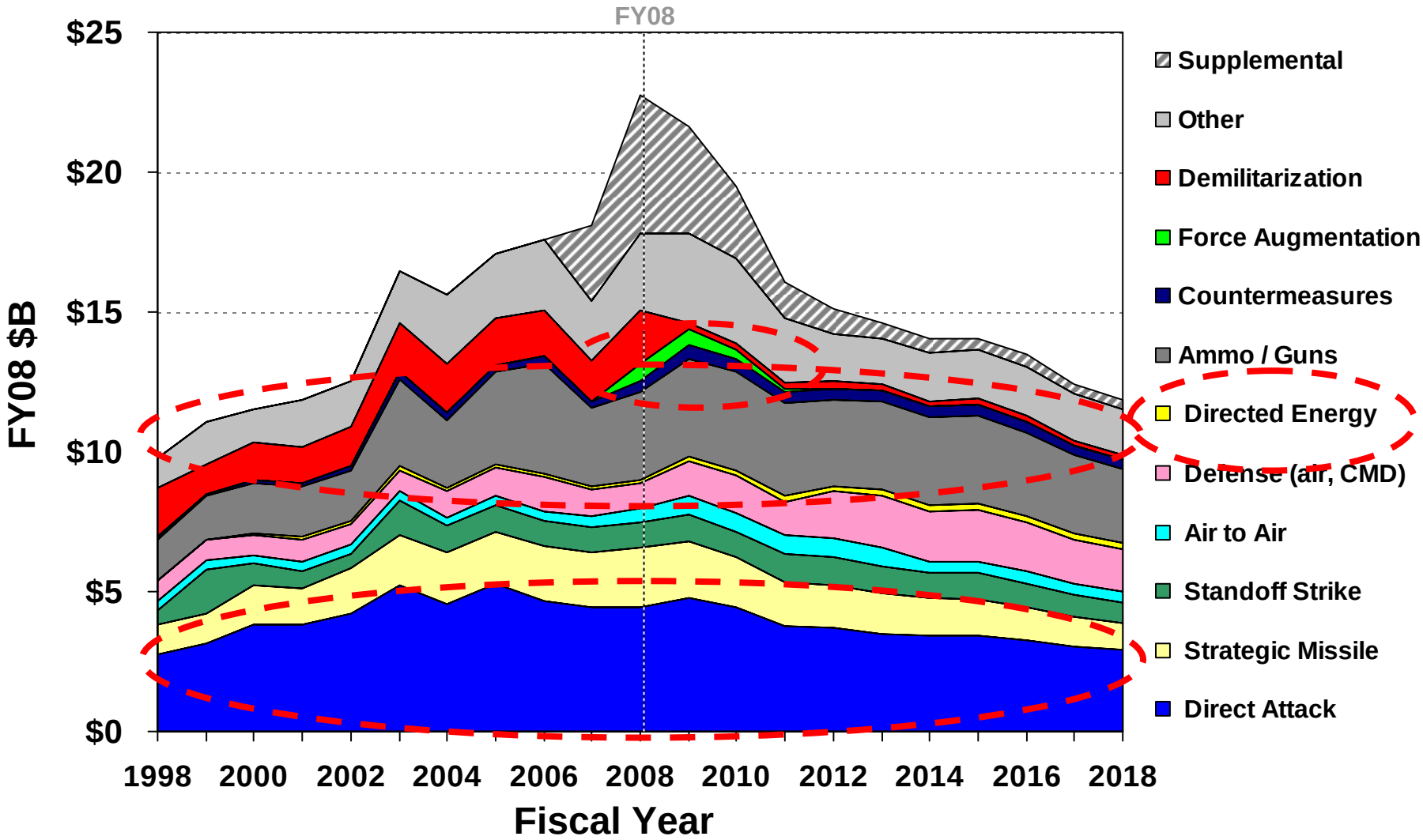
Source: GEIA

Market Forecast: By Military Service



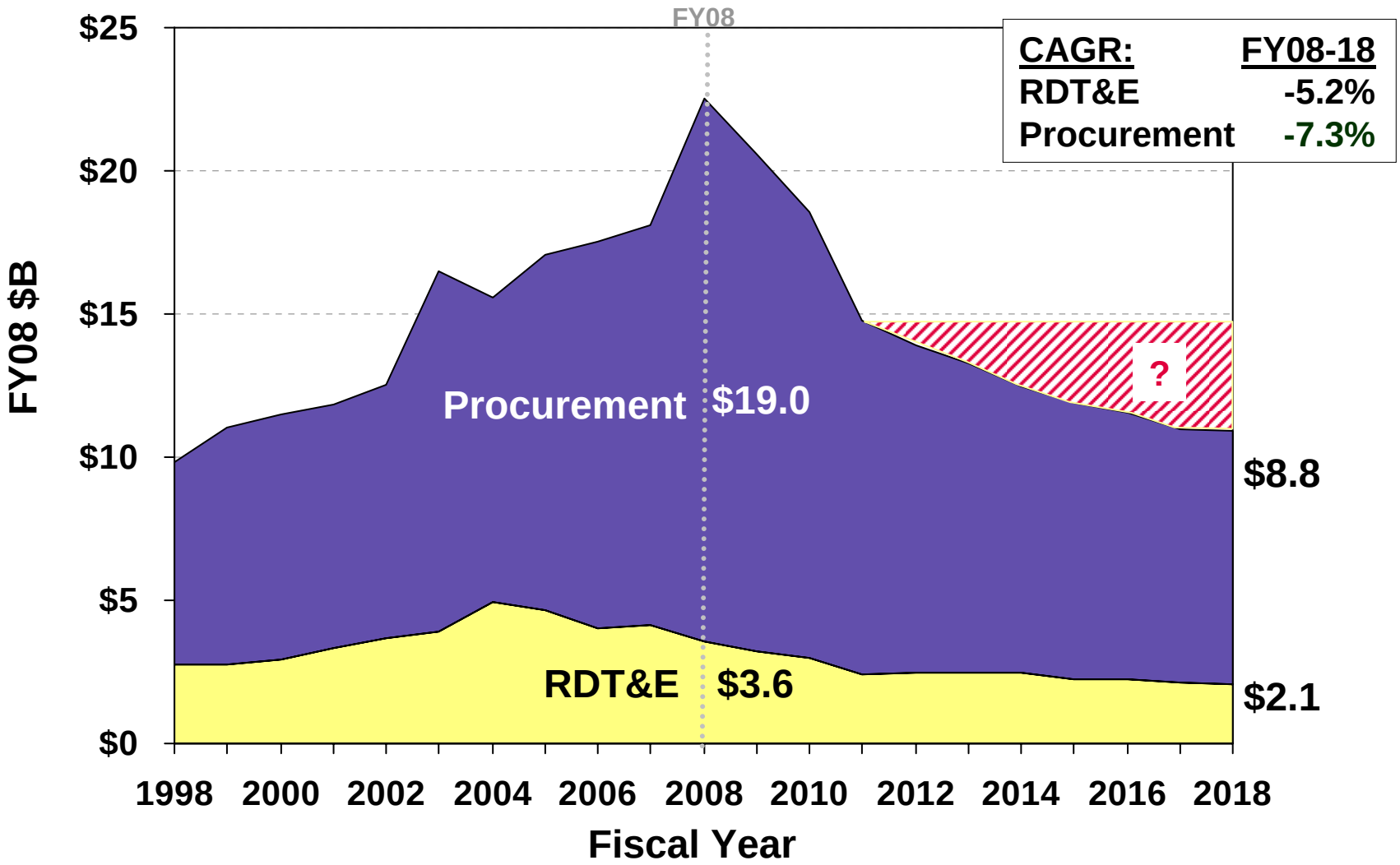
Source: GEIA

Market Forecast: By Segment



Source: GEIA

Market Forecast: Procurement vs. RDT&E



Source: GEIA

BAE SYSTEMS

Evolution of precision engagement drives perception of missiles and weapons versus other defense investment segments

Accuracy

1943

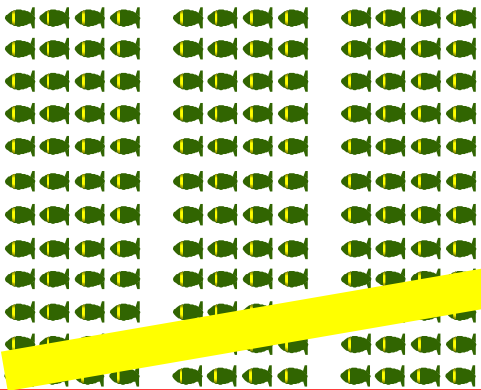
1500 B-17 sorties

9000 bombs

3300 ft CEP

One 60’ x 100’ target

WWII



1970

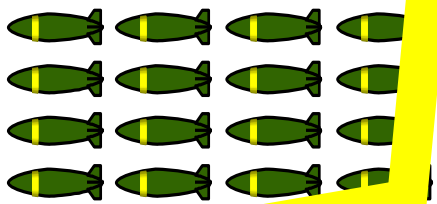
30 F-4 sorties

176 bombs

400 ft CEP

One Target

Vietnam



1991

1 F-117 sortie

2 bombs

10 ft CEP

Two Targets per Sortie

Desert Storm

2003

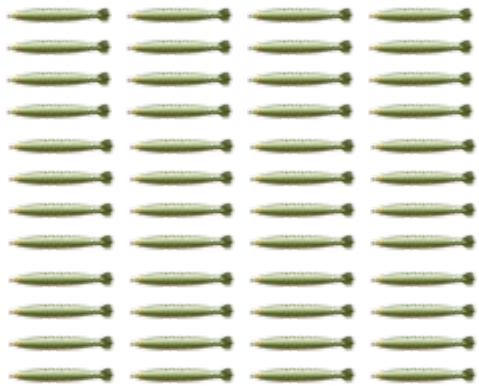
1 B-2 sortie

80 bombs

<20 ft CEP

80 Targets per Pass

All Weather



Accuracy

Source: USAF

Despite today's battlefield challenges, US forces are using existing weapons for desired effect…

…the real issue is targeting and networking

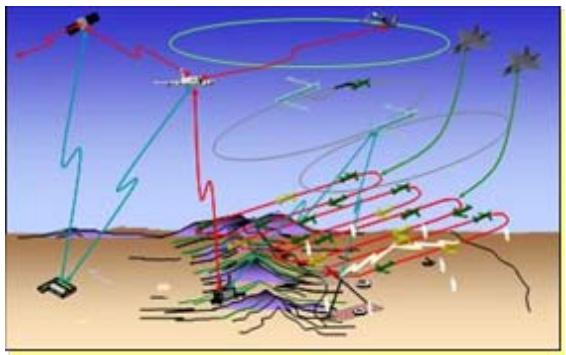
Iraq is driving many of the capability requirements

- Moving targets, fleeting targets
- Precision engagement in all weather
- Urban Close Air Support (CAS)
- Shortened kill chain
- Improved reliability
- Low collateral damage
- Non-lethal effects
- GPS interrupted / denied environments
- Hard and Deeply Buried Targets (HDBT)
- O&S assumptions built into design due to captive carry

Source: GEIA

Current Environment: Key Technologies

- Multi-mode seekers
- Datalinks
- Sensor fuzing
- Flexible warheads, scalability
- Hypersonic
- Smart fuzes
- Directed energy



Smart technology insertion needed to achieve cost-friendly, balanced capability portfolio

Source: GEIA

Numerous potential opportunities…

Near term <2010

- JAGM
- Smart artillery, mortars, rockets, tank rounds
- Direct attack moving target capability (DAMTC)

Mid-Term 2010-2015

- FCS Precision Munitions
- Weapons for UAVs
- Hard and Deeply Buried Targets
- Tactical Laser
- High Power Microwave
- Over-the Horizon Anti-Surface Warfare Weapons
- Swarm Ship Defense
- Joint Dual Role Air Dominance Missile (AA, AG)
- Long-range strike weapon
- Next-gen Torpedoes
- Non-Lethal Effects

Far-Term 2015+

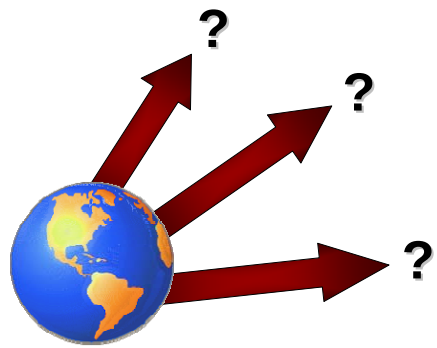
- Directed Energy
- Future Cruise Missile
- Electro Magnetic Rail Gun
- Autonomous Target ID

…but no clear roadmap

Source: GEIA

Impact of a "Global Terrorism" vector

- Emphasis on CAS in any environment with small, high-speed, precision weapons
- Requirements may expand for:
  - Fleeting target capability
  - Sensing and discriminating low-profile targets
  - Networking of all ISR platforms to rapid strike
  - Emphasis on speed over range
  - Low collateral damage
  - Scalability
  - Precision in all environments
  - Directed energy for non-lethal effects
  - Loitering weapons
  - Weaponizing UAVs

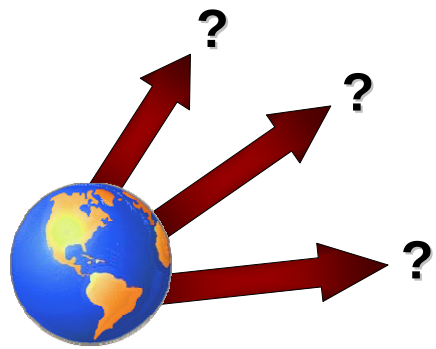


No appreciable difference versus baseline budget, though requirements may shift

Source: GEIA

Impact of a “Multipolar Alignment” vector

- Technology development to prepare for near-peer challenge:
  - Increased emphasis on baseline requirements (i.e. moving targets, all weather, networked weapons, etc.)
  - Emphasis on range as well as speed – fast, standoff weapons
  - Over-the horizon surface warfare
  - Advanced torpedoes
  - Cruise missiles
  - Hypersonic propulsion technology
  - Directed energy for force application / protection
  - UCAV weapons



Budget increases, though missiles & weapons will continue to compete with platforms

Source: GEIA

Potential disruptions

- Directed Energy
  - DE expected to be complementary to kinetic weapons
  - Technology development may come in advance of CONOPS / policy evolution
  - User pull required
  - ABL shootdown (FY 09) and ATL, HEL tech demonstration programs may indicate how quickly DE evolves operationally
- Cyberspace
- Convergence with or divergence towards other domains and sciences
  - Nano
  - Robotics
  - Bio

Source: GEIA

Messages to Industry

- Contractors are doing a good job developing technology and addressing capability gaps
- Make the dumb weapons smart and the smart weapons cheap
- Don’t try to add capability when it’s not needed
- Emphasize realistic cost estimates

Source: GEIA

BAE SYSTEMS

Thank You

The Joint Capabilities Integration & Development System (JCIDS)

Demonstrating Relevance to Decision-Makers

14 January 2008

Lt Col Robert “Prince” Valin

Joint Staff (J8), Force Application Engagement Division

Disclaimer

- The views expressed here are my own and are not necessarily representative of DOD, the Joint Staff, or the Air Force

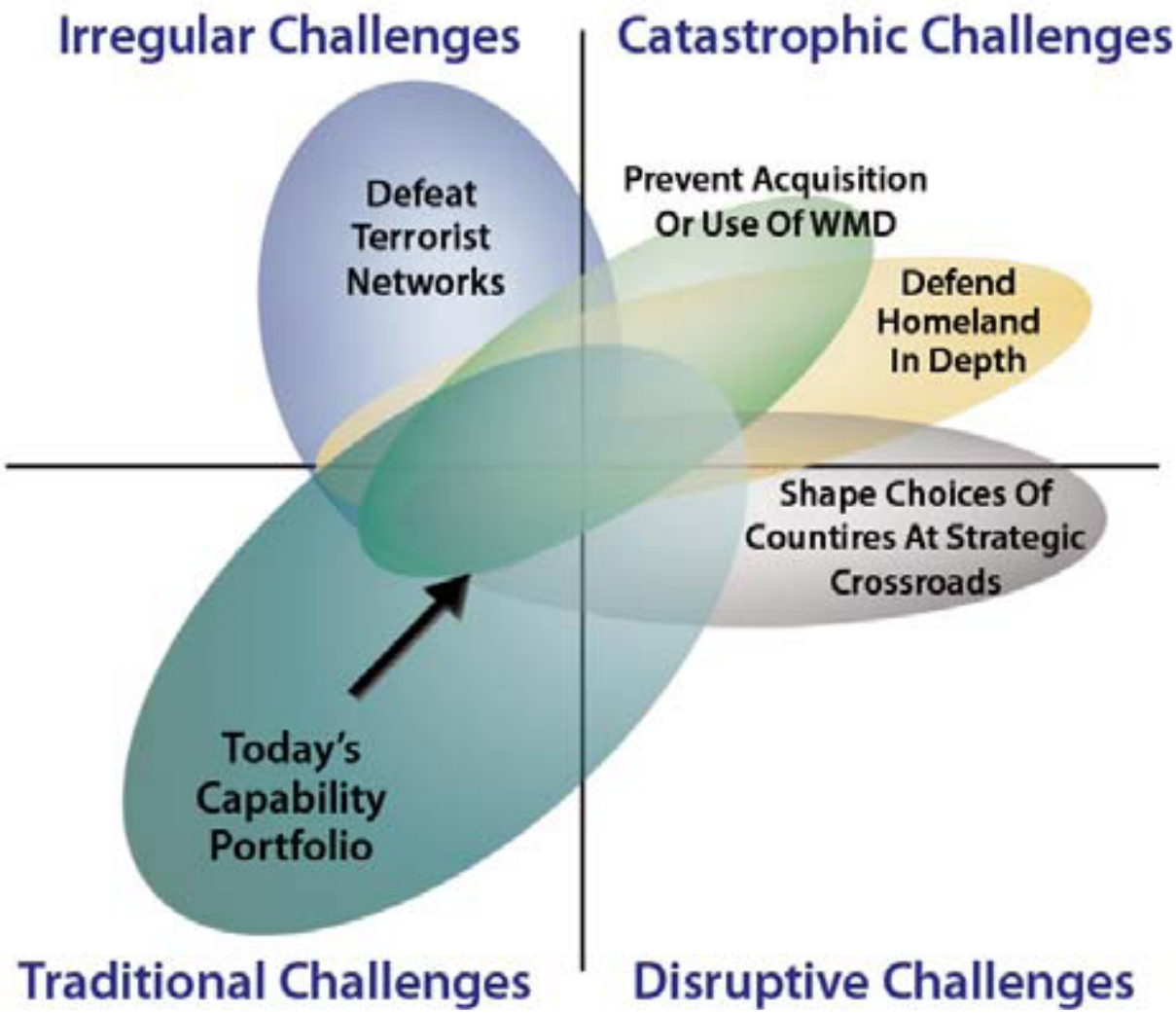
Why JCIDS?

- 2002 SecDef Memo
  - "... clear it [the requirements system] is broken ... inevitably continues to require things that ought not to be required, and does not require things that need to be required."
  - Priority theme ...
- Change to Dynamic, Unpredictable Environment
  - Previous -- Cold War focus, singular threat source
  - New world order – threat is a "Hydra"
    - State and Non-State sources
    - Threats in every corner of the world
- What is the basis for saying "yes" to Program X, and "no" to Program Y?

National Defense Strategy (2005)

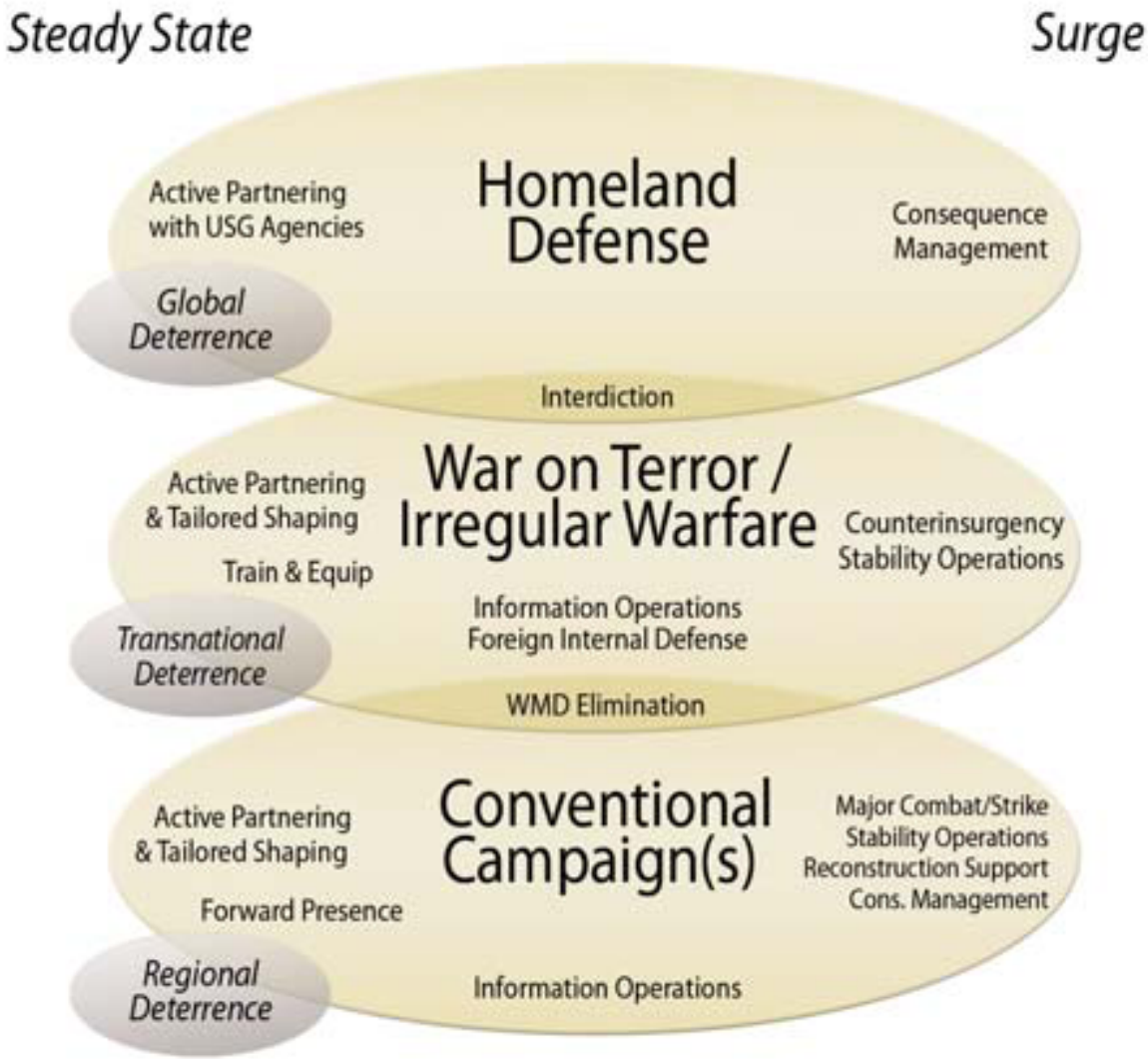
"Capabilities-based planning focuses more on how adversaries may challenge us than on whom those adversaries might be or where we might face them. It focuses the Department on the growing range of capabilities and methods we must possess to contend with an uncertain future. It recognizes the limits of intelligence and the impossibility of predicting complex events with precision. Our planning aims to link capabilities to joint operating concepts across a broad range of scenarios. The Department is adopting a new approach for planning to implement our strategy. The defense strategy will drive this top-down, competitive process. Operating within fiscal constraints, our new approach enables the Secretary of Defense and Joint Force Commanders to balance risk across traditional, irregular, disruptive, and catastrophic challenges. ***We will operationalize this strategy to address the spectrum of strategic challenges by setting priorities among competing capabilities."***

Challenges



"... the Department is shifting its portfolio of capabilities to address irregular, catastrophic and disruptive challenges while sustaining capabilities to address traditional challenges."

The DOD Missions



The Analytic Agenda

	Steady-State	Surge
Current	Plans (OPLANs, CONPLANs, etc.)	
Mid-Year (+7 years)	SSSPs	Major Combat Operations Scenarios MCOs (WD, SDTE)
Out-Year (+20 years)		Swiftly Defeat the Efforts

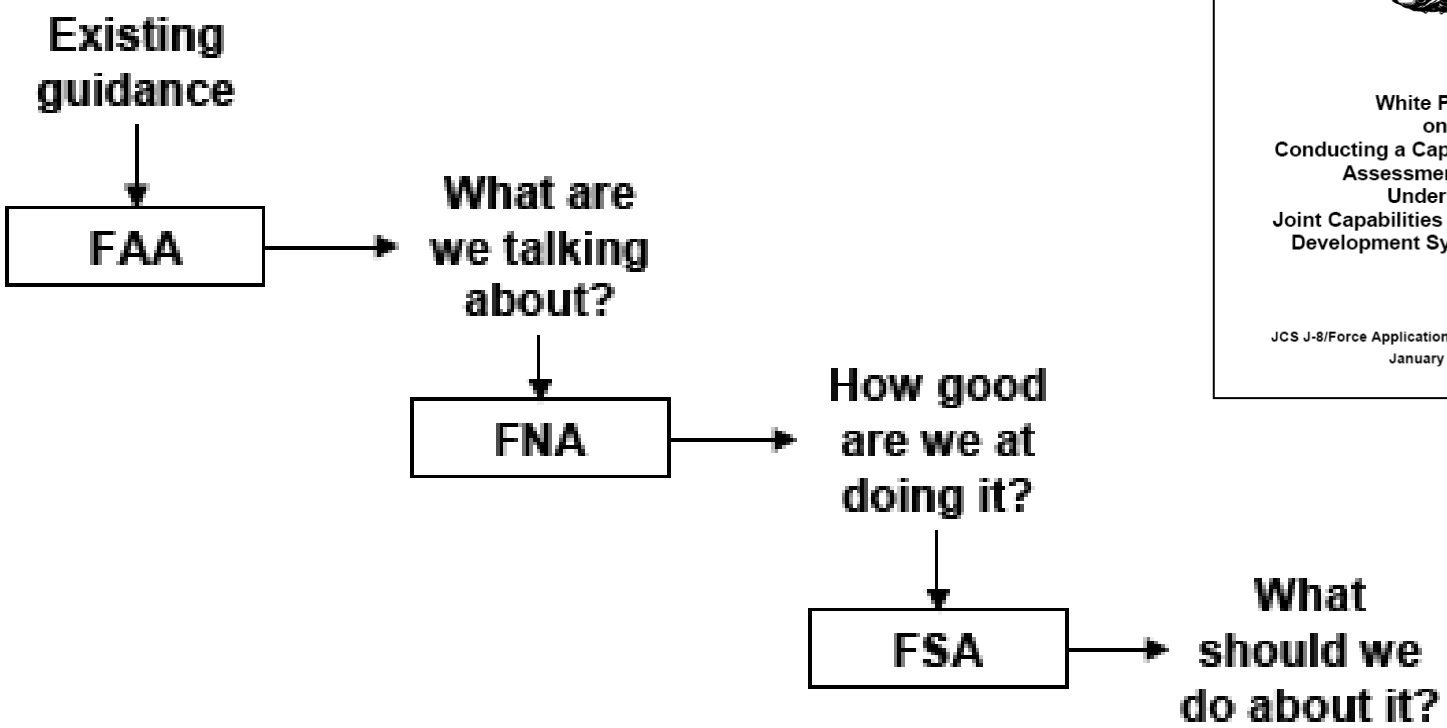
- Scenario Level – broad outline developed by OSD(P)
- Multi-Service Force Deployment (MSFD) data – detailed CONOPS, developed by Joint Staff with all relevant DOD organizations
- Analytic Baselines – specific details approved for DOD use, approved by OSD/PA&E

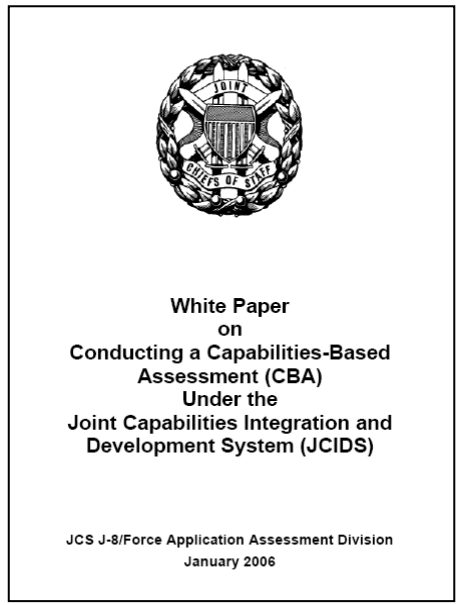
Anything else ...

- Finding a “need” for Program X is not enough ...
- Need should be evaluated FIRST
  - Assess utility against (many) potential threats
  - Is the threat “grave”? How important is the need?
  - When do we need it?
- Potential solutions need careful attention
  - Alternative solutions (to include non-materiel)
  - Offset consideration

Is doing nothing a reasonable alternative?

CBA Guide




White Paper
on
Conducting a Capabilities-Based Assessment (CBA)
Under the
Joint Capabilities Integration and Development System (JCIDS)

JCS J-8/Force Application Assessment Division
January 2006

CBA Guide available at http://www.dtic.mil/futurejointwarfare/

FAA and FNA

- FAA defines the military problem being addressed and specifies evaluation criteria as tasks, conditions, and standards (i.e. scope)
  - Determine what will be evaluated (tasks), the relevant operational environments (conditions), and how well, or to what degree the joint force must do them (standards – proficiency and sufficiency)
  - Analogy: What are the course objectives; prepare final exam
- The FNA assesses how well DoD achieves the military objectives
  - Evaluate how well the war fighter will do the tasks, to include with non-traditional means. Results should specify gap impact on objectives (e.g. minor inconvenience, 'we lose the war', or something in between)
  - Analogy: How did the students do? Exam results?
- "Capability gaps" come in two flavors:
  - Proficiency – the ability to do the task in the specified conditions and to the specified standards
  - Sufficiency – the ability to do the task as much/often as DoD needs

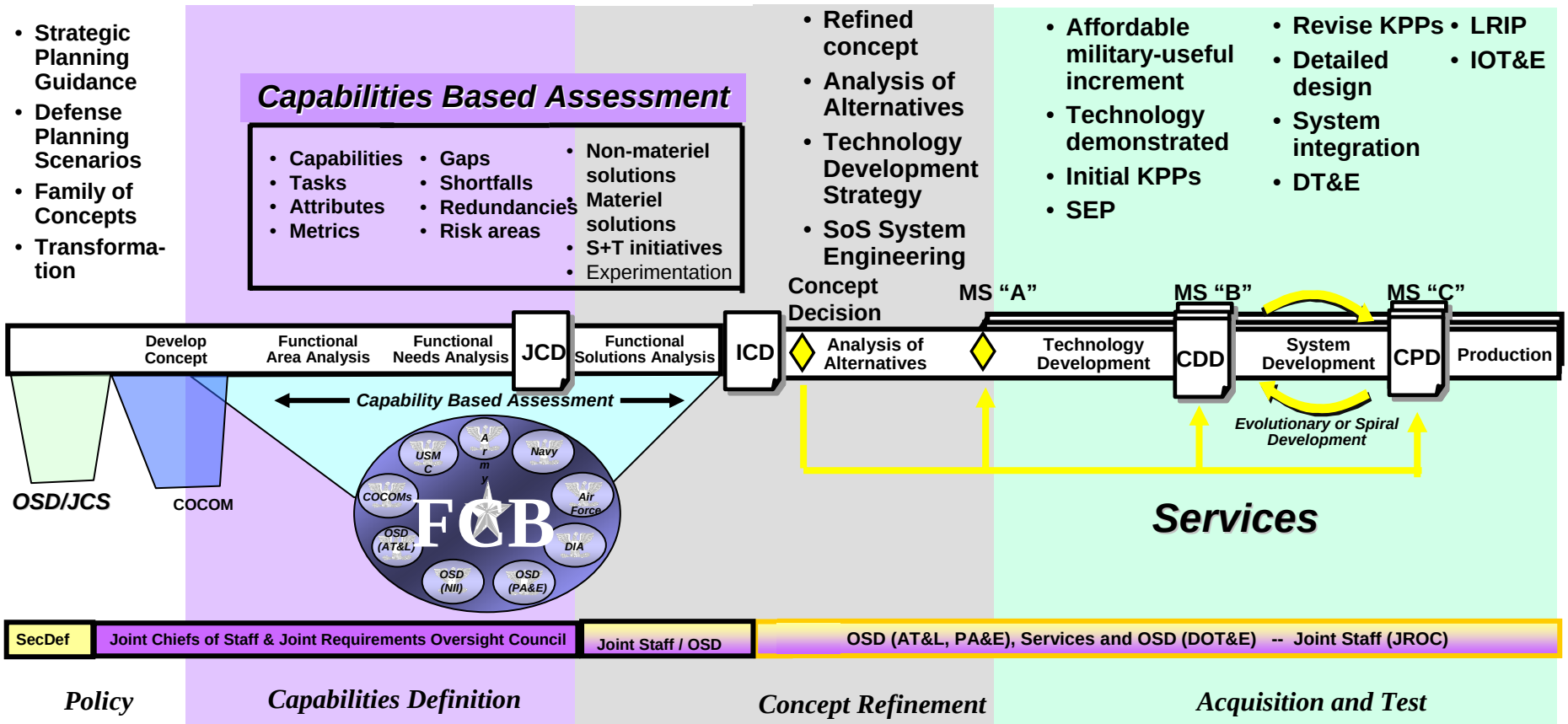
FSA

- Given that a gap exists (from FNA), what are the most promising solution paths available?
  - "Banded" solutions encouraged!
  - Solution maturity (tech, manufacturing, etc.) must be evaluated
  - Cost effectiveness, risk must be evaluated
- Two potential documentation paths
  - Initial Capabilities Document (ICD) – Materiel "heavy"
  - DOTMLPF Change Request (DCR) – Non-materiel "heavy"
- ICD may lead Analysis of Alternatives (AoAs), two documentation paths:
  - Capabilities Development Document (CDD), if material development required
  - Capabilities Production Document (CPD), if solutions is "off-the-shelf"

Concept Decision (CD)

- *Critical* Decision Point
  - Gap Identified
  - Potential Solution Paths Identified
  - Question: Should DOD apply resources to pursue a solution?
    - Viable answers require three big DOD tribes to agree!
- The CD Experiments
  - GS-Raid (Global Strike Raid)
  - JLTM (Joint Lightweight Tactical Mobility)
  - IAMD (Integrated Air-Missile Defense)
  - JRSG (Joint Rapid Scenario Generation)
  - JAGM (Joint Air-to-Ground Missile)
- The Evaluation of Alternatives (EoA)
- Tri-Chair Review/Decision

Focus


• Strategic Planning Guidance
• Defense Planning Scenarios
• Family of Concepts
• Transforma-tion
Capabilities Based Assessment
• Capabilities
• Tasks
• Attributes
• Metrics
• Gaps
• Shortfalls
• Redundancies
• Risk areas
• Non-materiel solutions
• Materiel solutions
• S+T initiatives
• Experimentation
• Refined concept
• Analysis of Alternatives
• Technology Development Strategy
• SoS System Engineering
• Affordable military-useful increment
• Technology demonstrated
• Initial KPPs
• SEP
• Revise KPPs
• Detailed design
• System integration
• DT&E
• LRIP
• IOT&E
Concept Decision
MS "A"
MS "B"
MS "C"
Develop Concept
Functional Area Analysis
Functional Needs Analysis
JCD
Functional Solutions Analysis
ICD
Analysis of Alternatives
Technology Development
CDD
System Development
CPD
Production
Capability Based Assessment
Evolutionary or Spiral Development
OSD/JCS
COCOM
FCB
USMC
Army
Navy
COCOMs
Air Force
OSD (AT&L)
DIA
OSD (NII)
OSD (PA&E)
Services
SecDef
Joint Chiefs of Staff & Joint Requirements Oversight Council
Joint Staff / OSD
OSD (AT&L, PA&E), Services and OSD (DOT&E) -- Joint Staff (JROC)
Policy
Capabilities Definition
Concept Refinement
Acquisition and Test

Capabilities Based Planning – The Big Picture

SOURCES

Strategic Guidance

National Security Strategy

National Defense Strategy

National Military Strategy

Quadrennial Defense Review

Analytic Agenda

Defense Planning Scenarios

	Steady-State	Surge
Current	Plans (OPLANs, CONPLANS, etc.)	
Mid-Year (+7 years)	SSSPs	MCOs (WD & SDTE)
Out-Year (+20 years)		

Doctrine & Concepts

Joint Doctrine

Joint Concepts

Why

What, Where, When, Who

How

PROCESSES

Requirements

JCIDS
Joint Capability Integration & Development System

CJCSI 3170

Acquisition

DOD 5000 Series

PPBE

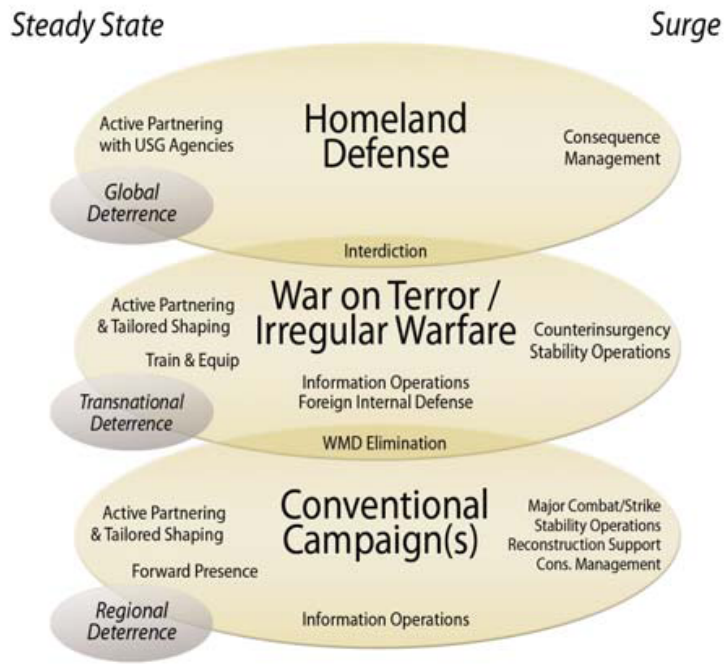
POM Builds
Program/Budget Review

JCIDS Critiques

Criticism	Response
• Not Responsive Enough	Transition from RGS (3+ years) JRAC Increasingly flexible (rules) Scrutiny will remain
• Ties to “effects-based operations” and/or Joint Concepts – Capabilities can’t be tied to specific adversaries or places – Too ethereal to substantiate real-world application	“Effects” and EBO not the same Focus on need, not solution-based Joint Concepts only help the “how”
• Ineffective Prioritization – First attempts tied to “gaps” as proposed by COCOMs, Services – Impact of DOD mission objective attainment minimal, subjective – Current efforts to prioritized Joint Capability Areas (JCAs)	Guilty! Way-Ahead TBD – hopefully based on mission priority, objective attainment, and time of need Useful for trades Not helpful in roll-ups

Prioritization Concept

- 1 to N, or Trades?
- Gap “grades”
  - Time
  - Impact to scenario
  - Scenario importance
    - How many scenarios?
    - Weighted importance?
  - Evaluation time – updates?
- Previous concept issues



Future

- Good bet
  - Emphasis on “Interdependence”
    - Beyond interoperability
    - Conflict with some established doctrine/concepts, particularly when “organic” solutions are offered to address enterprise-wide capability gaps
      - Logistics (e.g. airlift)
      - C4ISR (e.g. Intelligence collection, Information dissemination)
      - Electronic Warfare
    - More reliance on Service-based analysis (within natural domains)
    - Lower tolerance for organic capabilities beyond Service core-competencies (e.g. stovepipes, Service-unique programs)
  - Format changes (ACAT or JPD level views)
- Probable
  - Clarified “roles and missions” for COCOMs, Services, and especially Reserve Components
  - More focus on prioritization of individual capability gaps, enabling “trades” – requires “top-down” weighting of DOD missions
  - Less focus on prioritization of capability areas

QUESTIONS?

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BACKUP

JCIDS Critiques

- LtGen (Ret) Van Riper (11 Dec 05)
  - "... today JCIDS evidences all the signs of an overly bureaucratic and procedurally focused process ..."
  - "... damaged the military lexicon ..."
  - "... a truly useful military operating concept only results when there is a need to solve a significant problem ... perform some military function better or in a new way."
  - "a 'revolution in military affairs' or a 'military transformation' ... now serve as a mantra for those advocating advanced technologies"
  - "... concepts to justify directly ... every programmatic decision ..."
  - "seem to serve more as a means to slow innovation"
  - "lack of intellectual content in emerging joint concepts ... assigning our best thinkers to infuse content into vacuous slogans ... none more egregious that the idea of 'effects-based operations'"
  - "Effects-based Operations ... not useful against 'interactively complex systems'" (e.g. economic and leadership systems)
  - "... senior joint and service leaders must clearly identify the most significant problems ..."

The Munitions Requirements Process (MRP)

- Tied to PPBE
  - Two-year effort
  - Process: A Simple View
    - OSD Policy and AT&L determine scenario list for enhanced review/analysis
    - DIA develops threat (near-term and future)
    - COCOMs develop near-term plans for listed scenarios
    - Joint Staff develops future plans for listed scenarios
    - Services develop individual munitions requirements
    - Risk Assessments by Services, COCOMs, Joint Staff, and OSD
- Tied to QDR's Force Planning Construct
  - Traditional surge scenarios tend to be munitions "drivers"
  - Service munitions investments driven by needs in defined scenarios
- Munitions are typically not bought to full requirement
  - Shorter lead-time than many other needs, but not insignificant
  - Lesser impact on other force elements (force size, readiness, etc.)

QDR: Operationalizing the Strategy

- Defend the Homeland
  - Steady-state – detect, deter, and if necessary, defeat external threats to the U.S. homeland, and enable partners to contribute to U.S. national security.
  - Surge – contribute to the nation's response to and management of the consequences of WMD attacks or a catastrophic event.
- Prevail in the War on Terror *and* Conduct Irregular Operations
  - Steady-state – deter and defend against external transnational terrorist attacks, enable partners through integrated security cooperation programs, and conduct multiple, globally distributed irregular operations of varying duration.
  - Surge – conduct a large-scale, potentially long duration irregular warfare campaign including counterinsurgency and security, stability, transition and reconstruction operations.
- Conduct and Win Conventional Campaigns
  - Steady-state – deter inter-state coercion or aggression through forward deployed forces, enable partners through theater security cooperation, and conduct presence missions.
  - Surge – wage two nearly simultaneous conventional campaigns (or one conventional campaign if already engaged in a large-scale, long-duration irregular campaign), while selectively reinforcing deterrence against opportunistic acts of aggression. Be prepared in one of the two campaigns to remove a hostile regime, destroy its military capacity and set conditions for the transition to, or for the restoration of, civil society.